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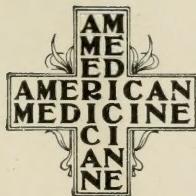
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In Advance

Another Year.—Nine years ago the assassination of an Archduke inaugurated a period of Pan-European desolation, from which the world has not emerged. The international situations, apparently normal and friendly, were suddenly distorted and perverted into whirlpools and eddies, and dangerous rapids that threatened all lands.

The Treaty of Versailles, 1918, attempted to supply the terms of the peace, but life-giving peace has not yet rested upon Europe. Today economic distress and many types of social iniquities are taking a toll of human life, almost as devastating as that paid to lead and steel, hurled from machine guns. Europe grapples with famine and pestilence, with political machinations, with national greeds and jealousies, as the new year enters.

Christianity and Moslemism are clashing, while the young Turk, with a renewed burst of nationalism, endeavors to reestablish the strength of Turkey in Europe. The defeated Turk emerges as a practical conqueror. Defeated Germany strives to hold up its fallen mark by industrial effort. France has entered the Ruhr, and pleads for financial succor and adequate guaranties against a revisititation of her shot-riven fields. Russia struggles in the adjustment of a new experiment in government against the delays of disapproval, dissension, credits, famine and pestilence.

The peace of the world, from Patagonia

to Nova Zembla, is more weird than impressionists have yet placed upon canvas. Thus the world stands with a "Happy New Year" upon countless lips.

The great inventions of the age, from the steam engine and the steamboat, to the aeroplane and radio, have tended to bind together the nations of the world. The annihilation of time and space in transportation and communication has created a degree of national intimacy that has produced a feeling of internationalism, against which conservatives thruout the world are fighting.

The ties that bind nations most are only those of speech and social intercourse. The machinery for these accomplishments was never so numerous nor so effective as to-day. Nor can one believe that they have reached their ultimate development.

Nineteen hundred and twenty-three has come over the horizon of time. It is not in fact a new year merely because one figure has been changed in the index of chronology. Time is continuous, but for purpose of finite understanding, the earth's revolution around the sun is accepted as a measure—a ticking of less than a second in the chronology of universes. Man calls it a new year. It may be new in the events that are to occur, the inventions that may appear, and the destinies that may be altered. With uncertainties, fears, anxieties, hopes and temptations, there is the sugges-

tion to mankind that happiness marks each year. The march of progress has been blocked, tho possibly not so markedly as pessimists would urge. From the pandemonium of national crises may evolve a finer product of human understanding and brotherliness.

Whether the year is to be new in advance or retrogression, a fanatic prophet alone would have the temerity to say. Certain it is that the evolution of a better spirit in the world involves a finer expression of individual thought and sentiment.

Among the professions dealing with human values, none is closer to the mind of man than medicine. The physicians are in contact with family life in luxury and poverty, sickness and health, in temptation, trial, adversity, sacrifice, in pleasure, success and triumph. They look thru the habitation to the human inhabitants. They grasp the significance of the home as well as the house. They recognize the manliness in the man, the spiritual qualities, dwarfed, twisted, and handicapped in frail bodies and crippled frames. To them is given the opportunity to find the well-springs of happiness in the different heritages of mankind.

Doctors by reputation are genial, and expressive of health, contentment and happiness. As a specially selected group, constantly in touch with the better ways of the world, they proceed on their mission of healing, radiating service, joyousness and hope. Happiness lies all around them and enters into their every ministration.

To wish a "Happy New Year" to the medical profession is but to bid them continue to enrich human life and to find a greater joy in their life of service, and this, AMERICAN MEDICINE wishes to its co-workers in medicine. May they have a

year new in power, in health, and health-giving, and happiness in continued service that radiates sympathetic understanding and loyal devotion to mankind, for the further development of an era in which wishing a "Happy New Year" may become an anachronism, as it becomes a fact.

Public Health and Medical Training.—

In *The Annals of the American Academy of Political and Social Science*, January, 1923, George E. Vincent, President of the Rockefeller Foundation, discusses "Public Welfare and Public Health." He regards public health, as does Governor Smith, as a fundamental condition of public welfare, involving a scientific basis and an ever-growing efficiency in administration. He calls particular attention to the transition of the public health idea from merely negative protective agencies, to positive efforts to foster physical and mental vigor. He recognizes that preventive medicine, in order to become powerfully effective, must secure the hearty cooperation of public and private agencies for welfare.

In this broad idea are involved numerous social, economic and educational factors. To many it seems far-fetched that public health should become in part a problem dealing with the standards of living, economic production and the distribution of wealth. It requires no feat of the imagination, however, to recognize that in point of practice, public health officials are concerning themselves with nutrition, housing, recreation, and mental adjustments, as well as with the older forms of control of contagious diseases, and improvement of sanitation.

A public health program must be of broad scope and it is not amiss to appreciate its breadth as affecting human life, as pre-

sented by Rosenau. In his conception, an effective program should include the following useful fields of activity: "(1) The prevention of the communicable diseases; (2) the prevention of the non-communicable diseases; (3) sanitation, or biologic cleanliness, including an improved environment; (4) vital statistics, or the bookkeeping of humanity; (5) education, or the diffusion of knowledge among the people in regard to sanitation and hygiene; (6) infant welfare and the reduction of infant mortality; (7) the health and development (physical, mental and moral) of the school child and the adolescent; (8) food and nutrition, the relation of diet to growth and health; (9) industrial hygiene, the health of the worker; (10) personal hygiene, mental hygiene; (11) maternity and the care, protection and encouragement of the function of motherhood; (12) eugenics, the principles of sound breeding and heredity; (13) research to extend the boundaries of knowledge."

In view of this extensive scheme, it is patent that medical education requires an adjustment. This fact is properly stressed by John M. Dodson, M. D., in his discussion of "Preventive Medicine and the General Practitioner," *Journal of the American Medical Association*, January 6, 1923. He advocates the revision of the present curriculum in such a manner as to stress the importance and need of prevention. He recognizes that the remedy does not lie so much in the creation of new courses, nor to any great extent on the replacement of existing courses, but rather in the change of attitudes of the instructors in all courses.

In other words, the fundamental difficulty in the education of medical students lies in the antiquated viewpoints constantly evidenced by the teaching staff.

It is probable that some effort will be required to review the existent medical school curricula, with the purpose of weighing the relative importance of subject-matter in terms of time distribution. The altered viewpoint of the age indicates that the structure of the curricula today would be modified by revised thinking concerning foundation values. The general tendency in revising curricula is to crowd in new subjects, or new courses, without taking out anything that has already been taught. This appears to be an incorrect method of procedure. What is required today is an awakening to the necessity of recasting the curriculum in terms of present-day needs and ideals. This involves, not a stripping of the curriculum, but a complete reformation of it, with a view to rebalancing the subject-matter in such a way as to secure the maximum useful knowledge that should be presented to medical students.

As an illustration, one might refer to the small part that psychiatry has played in medical colleges in comparison with the present-day interest in the psychiatric approach to medical problems. One may consider the lack of attention given to the social, economic, psychologic, or educational factors that are involved in the better types of medical practice, and ask whether the current medical curriculum is adequate to prepare young physicians for sound practice in the world in which they are to find their activity.

Much would be gained, it is true, by injecting the modern viewpoint into medical teaching, but it is doubtful whether this course would suffice to enable medical students to grasp the underlying principles of modern preventive medicine. Such a development would undoubtedly enhance the value of current teaching. If, however, it

were supplemented by some form of renovation of the curriculum, the benefits would be correspondingly greater. The end-result would be more satisfactory, in that the young physician would possess the general background and knowledge essential for rational thinking upon medical-social problems, and find himself prepared to take his place, not merely in the service to families, but in leadership for advancing communal health.

This is as necessary for the growth of the public health program as the factors of education applied to the ignorant home maker or the indifferent adolescent.

A State Health Ideal.—The advent of a new governor is always hailed by the medical profession with some degree of apprehension, until his opinions upon medical problems are stated. After the gubernatorial message, the agitation of the medical profession is not infrequently increased by virtue of disagreement with the views expressed. This is particularly noteworthy as a result of the inaugural address of Governor Alfred A. Smith, of New York. In the exposition of his viewpoint there is evidence of a wide social ideal.

"Activity by the state for the preservation of public health can never be too broad. While we may congratulate ourselves on the steadily diminishing death rate, we must not permit ourselves to slow down for a single moment any effort that the state should put forth for the protection of the public health and the prevention of disease. Too many people are prone to the idea that health is the concern of the individual. I believe it to be the business of the state, because the state itself cannot be healthier than its people."

This view, after all, is not to be regarded as radical. It is doubtful whether it any

longer represents a merely liberal view. It constitutes practically the consensus of public opinion. It is the underlying thought of all state legislation, designed to effect an improvement in public health, whether it involves the establishment of itinerant clinics, new institutions, educational measure for the prevention of disease, or the establishment of periods of quarantine.

Undoubtedly much opposition will be found to his suggestion that, "the state, as a matter of sound policy, should take advantage of the federal appropriations made by the Congress of the United States, under what is known as 'The Sheppard-Towner Act to promote the welfare and hygiene of maternity and infancy'."

Governor Smith takes the position that as New York State pays a large portion of the federal taxes, it should take full advantage of the appropriation made by the government, regardless of whether there is objection to the principle involved or not. He does not voice, however, the sentiments of a certain portion of the medical profession, when he says, "Certainly nobody can complain about the purpose for which the appropriation was made." There are many in the profession who object to the purpose of the appropriation and steadfastly oppose the inauguration of federal aid along the lines finally enacted into law.

This indicates that, in all probability, social legislation will be presented to the New York State Legislature in consonance with the beliefs of Governor Smith, and the profession, itself, will again be placed upon trial as to its own social thinking. Undoubtedly, there will be additional bills dealing with various cults, seeking for opportunities to practice legally, and numerous other items that may affect the welfare of the medical profession. With the broad interpretation for which Governor Smith is

commendably known, and with his outstanding courage in the matter of vetoing undesirable legislation, it is more than probable that physicians need not fear for any invasion of their essential rights, or a decrease of their granted privileges.

There probably will not be unanimity of opinion concerning the merits of much of the proposed legislation, but the fact remains that more and more are laws being drawn and enacted on the basis of the interests of the state as a whole, as contrasted with their benefits to, or effects upon, any particular group of citizens within the state, even tho they chance to constitute a professional class. The distinctly medical point of view cannot be regarded as entirely in accord with the point of view of the state. The part of medical opinion which reflects thought upon the state as a whole, is more likely to receive the fullest attention of legislators, even tho the proponents of such be of a small minority of the profession. It is for this reason important that county societies thruout all states, in the discussion of problems dealing with public health, should manage to place upon their official programs speakers who will present the non-medical viewpoint. This will aid physicians to appreciate the attitudes of various constituencies that aid legislators to crystallize their ideas for the purposes of voting upon proposed bills.

Medical lobbies have not been particularly strong, nor is it an easy matter to gather together a group of physicians, willing to make the personal sacrifice necessary to visit state capitals, for the purposes of protesting for or against impending legislation. Not infrequently the speakers from the small groups that go for this purpose are insufficiently informed concerning the social facts involved, or are untrained in the art

of presenting in a convincing or persuasive manner the facts which are deemed unanswerable. Further, the various differences of opinion existent in different sections of New York State, make unanimity of thought difficult. Honest disagreements within a profession are to be welcomed, and both majority and minority should be mutually respected for their beliefs and the courage of their convictions. The tendency to abuse that is often manifest only weakens the status of the pleaders. Governors, and legislators, after long experience in politics, are immune to many forms of verbal attack, which might be productive of better results with immature, untrained, or unthinking persons.

It is time for the medical world to take cognizance of the value of solidarity, and the determination of a policy which is founded upon a sense of appreciation of social needs and an understanding of the part that health is increasingly playing in governmental action. Legislation is not static, nor can medical opinion afford to be less dynamic than medical progress.

Medical Aid to the Courts.—There is a constantly growing interest in the application of medicine to penology. This is manifested, not merely in the greater degree of attention bestowed upon the medical oversight of convicted persons and the establishment of a finer type of institutional infirmary, but in the organization of medical departments in connection with various elements in our judicial system.

In the *Report of the Municipal Court of Philadelphia for 1921*, one notes the report of the Medical Department, which carries on general physical examinations, urologic and psychologic examinations, and

venereal diagnosis and treatment, and, in addition, does various forms of field investigation, and additional service for unmarried mothers.

The purposes of the Medical Department are: "(1) To make accurate diagnosis, in order that the proper treatment may be carried out, the husband made physically fit for work and the wife made physically sound to care for her children; (2) to place the irresponsible and backward child in an institution where he may be educated or trained; (3) to place the mentally deficient, and to find a haven for the idiot and imbecile; and (4) to isolate, segregate, and treat women brought before the court suffering with venereal diseases, until they are no longer infectious or contagious."

This wide sphere of effort is designed to promote justice and to guide the court to greater wisdom in passing judgment.

The organization of the Medical Department consists of a medical director, a pediatrician, an orthopedist, four psychiatrists, two psychologists, five physicians for general medicine and gynecologic service, and one laboratory worker. This distinctly medical group is supplemented by twenty-two nurses, part of whom are engaged in following up tuberculosis work, prenatal service, venereal diseases, or the general social service work, essential with problems in the domestic relations division. In addition to the nurses, there is a technician, a laboratory assistant and a dietitian.

In general, the Medical Department assumes all responsibility for the various types of work it undertakes, with the individuals who are sent to them from the domestic relations, juvenile, misdemeanants, and criminal divisions, because of complaint of physical or mental defects.

In the course of a year a considerable amount of investigation is required, along

with corrective service in hospital or dispensary, placement in hospitals or institutions, commitments, and making such adjustments as are requisite for promoting the well-being of the individual coming under the supervision of this department. As a result the judges of the Municipal Court of Philadelphia find themselves in the fortunate position of having a medical arm, whose hand reaches out to protect the alleged offender, the family, and the community, as well as the court, itself. The greater liberality of our judicial system in the matter of indeterminate sentence, parole, and probation, is further enriched by a wider knowledge of the medical and psychologic elements entering into the cases presented. It is a far-reaching, rational program, that provides for the wisest possible knowledge of the offender in his social setting, including his inherited physical and mental make-up.

The purpose of modern penology is to deal justly with the individuals and society, while correcting or removing the underlying causes, which participated in bringing about an entanglement with the judicial system. It is no longer regarded as human or just to penalize irresponsibles. The old theory that the punishment must fit the crime is slowly giving way to the concept that the punishment for the crime must fit the circumstances that were productive of the crime. In the development of this higher plane of justice (if justice can have more than one plane), the establishment of medical departments as part of the judicial system is not merely a pre-requisite, but an essential.

Social Hygiene in the District of Columbia.—The report of the *United States Interdepartmental Social Hygiene Board* indicates that in the opinion of the As-

sistant Attorney General, the Board still exists as it was created by act of Congress, but it is virtually without power to function in its field, owing to lack of appropriations. This is unfortunate, in view of the nature, extent and value of its activities. It has, during the last year, devoted most of its service to protecting the military and naval forces of the United States against venereal diseases. In addition, it was responsible for educational propaganda, research work, and the granting of allotments to state funds that were already appropriated for specific purposes in venereal disease control. With a lightened appropriation and a diminished staff, it has assisted in keeping the venereal disease rate in the army approximately twenty per cent. below the average of ninety-three per thousand, which was the average for the five years immediately preceding the World War.

Considering the vast improvement in municipal activities for the control of vice, it is significant that the District of Columbia, in which the seat of government is to be found, is without an adequate vice-repressive act. Still more important from the standpoint of public health, is the statement, "The District of Columbia is the only locality in the United States where the venereal diseases are not classified as contagious and in which the health officer has no power to quarantine for these diseases."

This state of affairs constitutes an indictment of the Congressional Committee, which deals with the official government of the District of Columbia. Ordinarily, it would be supposed that the capital of the United States would aim to make the district under its special jurisdiction a model for other communities. Considering the recognition which has been given to venereal diseases thruout the country, it is a

striking and regrettable fact that the greatest weakness in administration should be evidenced within the very section from which has come the greatest and most intelligent stimulation of interest in venereal disease control.

It should be a matter of national pride to establish the District of Columbia on a plane of administrative excellence that would constitute it a model district for the demonstration of modern methods of the control and management of all health problems, not merely those of venereal origin. Regardless of what the attitude of Congress may be towards federal responsibility in other communities, it must assume the responsibility for the state of affairs existent in the District of Columbia, which is unrepresented in Congress, by virtue of the terms of organization of this district, set apart, as it is, as the center for the federal government. There may be no falling back upon the inactivities of the police department, the lack of interest of the citizens, or the indifference of a health officer. The view must be faced squarely that the conditions within the District of Columbia, insofar as they may relate to health and contagious diseases, are, from the beginning to the end, a responsibility of Congress.

With a number of physicians in the Senate and House of Representatives, it is unbelievable that there should be such a weakness in the health administration as is pointed out in the criticisms concerning the non-reportability of venereal diseases, or the lack of a vice-repressive act. It should be a part of the particular responsibility of the medical men in the Houses of Congress to secure for the District of Columbia the finest type of health ordinances, those which have been approved by experience and are actually utilized in all other sections of the country.

Too Much Weighing and Measuring.—When the Children's Health Organization inaugurated its campaign to make weighing and measuring of children a routine procedure in the public schools, with a view to utilizing the knowledge thus gained for overcoming problems of nutrition, it was apparent that a latent danger existed. A reaction has now set in, as is evident by the action of Dr. J. E. Furstman, Health Commissioner of Peoria, Ill., who has put an end to the promiscuous weighing and measuring of pupils in the public schools of his city.

In his report he states, "The health director feels that there has been altogether too much weighing and measuring in the schools and little has been accomplished as a result. I feel that there cannot be any standard adopted for weights and heights that will fit different types of children, and what would be normal weight for one child would be considerably abnormal for another type.

"The weighing and measuring of the children has created a great deal of worry upon the part of many parents, and the director would suggest that this practice be discontinued, at least until such time when we know more about the reliability of these systems of measurements and weights than we know at present."

There is much to be said in favor of this judgment, but it also represents an extreme point of view. No procedure for the determination of physical abnormalities has one hundred per cent. application. The differences that ensue from the utilization of weighing and measuring children are dependent upon their interpretation and the attitude of school administrators towards their meanings. There should not be an occasion for the creation of worry on the

part of parents, if there is intelligent understanding of the various features involved in interpreting standard tables of averages of weights for ages and heights. It is true that no standard table thus far applied is wholly accurate, but various tables have been established which give a considerable degree of information easily ascertainable and possessing immensely practical values.

The solution of a problem of this character does not lie in bringing about a cessation of the plan of weighing and measuring, but rather a greater degree of education of teachers as to its scope and limitations, its advantages and disadvantages. Furthermore, the little knowledge that is a dangerous thing, should be overcome by a broader training of teachers, so that they will not be guilty of the tactless or faulty approach to parents, which results in the creation of abnormal reaction to the facts demonstrated. Every table of averages indicates that there are children above and below the accepted figure, possessing normal nutrition. There is inherent the idea that race and color, familial stock and parental tendencies must be given consideration in estimating the relation of the individual child to what is accepted as the average. Everyone should appreciate the fact that the average child is an abstraction, that normality in height and weight is not the same as average height and weight.

The Health Commissioner of Peoria has recognized an abuse in the school administration of a clinical method that is helpful in determination of nutritional defect, but the administrative step that he has taken does not reflect the soundest judgment. The correction of the abuse is not identical with the elimination of the system which has been misused. No one would suggest the elimination of the Wassermann test as

a routine measure or the cessation of tuberculin tests, because the doing of them might create a feeling of anxiety on the part of those unfamiliar with their purpose. Nor from the social standpoint today, would one abolish vaccination or Schick testing in schools, because of the emotional reactions of parents. In strictly educational work, no educator would think of abolishing ungraded classes for mentally defective children, nor abolish classes for the conservation of sight, or cast out open-air classes for the protection of anemic or potentially tuberculous children, because of fears or worries of parents.

The educator, school superintendent or teacher, would undertake to educate the parents to the value of these classes and indicate their importance for the progress of their children.

It is unfortunate that the Health Commissioner of Peoria should have approached the problem with a point of view that failed to recognize the tremendous advantages of weighing and measuring of school children as compared with the occasional difficulties that arise because some parents fail to appreciate their essential value. The abolishing of this measure in the schools may possess an advantage in calling attention to some of the shortcomings of a wholesale application of standardized tables of weights and measurements. It does not, however, call for an imitation of the method employed in Peoria, which is reactionary and retrogressive, rather than forward-looking and constructive.

Weight and Longevity.—The *Statistical Bulletin of The New York Life Insurance Company* for November, 1922, directs attention to some of the factors involved in

the relation of body weight to longevity. Insurance experience has indicated that over-weight constitutes a bodily impairment, particularly after the age of thirty-five years. In general, the seriousness of over-weight increases as age advances and is to some extent proportionate with the amount of the weight.

The actual experience indicates that among short men, *i. e.*, below five feet, seven inches in height, at the age period between forty and forty-five years, an excess of twenty per cent. in weight involves an added mortality of thirty per cent. above the normal, while a forty per cent. increase in weight increases the above normal mortality to nearly eighty per cent. Among tall men over five feet, ten inches in height, a still more serious influence is noted in that twenty per cent. excess in weight involves a forty per cent. increase in mortality, while the mortality is doubled where the weight excess is forty per cent.

Under-weight, while it may be an impairment in early adult life, appears to be an advantage after middle age, and above the age of forty a condition of under-weight appears to possess a definite advantage.

It would appear as tho those who weigh between ten and twenty per cent. below the average possess the best conditions tending towards longevity in most of the ages after early adult life.

While there is a paucity of statistical material beyond that offered by insurance companies, it is thoroughly apparent that a large field of investigation is opened up to the physiologist and the industrial hygienist. It may properly be asked why over-weight tends to earlier physical deterioration. It is only upon the basis of such knowledge that it becomes eminently practical to determine whether this increased mortality

from over-weight is of a preventable nature, by improvements in personal hygiene, or whether the emphasis must be placed upon the prevention of the fat accumulations, which have been more or less accepted as a normal incident to the physical development of middle age. Further information is also required as to the relation of diseases of the heart, arteries, kidneys, and lungs to varying degrees of over-weight.

There is necessity, similarly, for a certain degree of discrimination of various types of over-weight, as, for example, those with small and large chest capacity; those with long trunks, and those with short trunks; those with large abdominal girth, and those with small abdominal girth; those with physical defects existent previous to the accumulations of fat, and those free from handicaps before the over-weight of fat is accumulated. Studies of this character may yield valuable information and certainly are necessary before it is possible to interpret with accuracy, even the figures now available from insurance records.

Common experience brings out the fact that the majority of persons who live to a ripe old age belong rather to the under-weight group than to the over-weight group, tho there are no definite figures to indicate the proportions of under-weight and over-weight at ages beyond sixty.

Regardless as to the facts concerning the diet, there is strong reason for viewing the fat accumulations dependent upon over-eating as an unnecessary burden, which threaten the essential vitality of the organs of the body.

In connection with the foregoing, especial attention should be drawn to Dr. Rose's admirable article on page 26.



MEN AND THINGS

Prohibition: A Medical Referendum.—

There have been numerous straw votes conducted by newspapers and periodicals of various kinds on the question of prohibition, and the results have always been interesting, but only as revealing the sentiment of a public recording its feelings in the matter. These ballots have given editorial writers their text for either a slashing attack on the Eighteenth Amendment as a violation of personal liberty or a laudatory article on the Prohibition Act as reflecting the will of a majority of the people. In the majority of cases, it must be admitted, the results of the ballot offered better material for attack than praise; but these ballots, after all, merely registered individual prejudices and convictions founded only on strictly personal reactions to the amendment. It is of real interest, therefore, to note this extensive attempt to obtain a view on prohibition, judged not as a principle but as a practical health issue, from a body of citizens especially qualified to so judge it. It is to the credit of the Dios Chemical Company, of St. Louis, that its officers conceived the plan to obtain a definite, collective opinion of the country's physicians on prohibition, and thus record, not an opinion of the moral or political aspect of the Eighteenth Amendment, but a judgment, unprejudiced and authoritative, of its effect on public health and well-being, which, in the final analysis, is the true measure of prohibition's success or failure. In our last issue we announced the compliment paid to AMERICAN MEDICINE in choosing it as the vehicle for making public the result of this ballot and, if we have consented to do so, it is because we are satisfied that the ballot has been conducted in such an unbiased and disinterested spirit as to make the result a contribution to science as much as a record of medical opinion. In the questionnaire mailed to nearly every physician in the country, the following questions were

asked: 1. *Have the cases of acute alcoholism in your practice increased or decreased since prohibition?* 2. *Do you consider that the health of the people in your community has improved under prohibition?* 3. *In the light of your experience, do you favor legalizing the sale of light wines and beer?*

Up to the time of going to press, 25,114 doctors have sent in their replies and others are coming in daily. The following table indicates the result of the voting:

QUESTION No. 1.

TOWNS UNDER 5,000.			TOWNS 5,000 AND OVER.		
INCREASED	DECREASED	NON-COMMITTAL	TOTAL	INCREASED	DECREASED
2,898	6,564	979	10,441	5,538	7,339

QUESTION No. 2.

TOWNS UNDER 5,000.			TOWNS 5,000 AND OVER.		
YES	NO	NON-COMMITTAL	TOTAL	YES	NO
6,393	3,812	236	10,441	7,482	6,723

QUESTION No. 3.

TOWNS UNDER 5,000.			TOWNS 5,000 AND OVER.		
YES	NO	NON-COMMITTAL	TOTAL	YES	NO
4,766	5,583	92	10,441	8,592	5,922

An Important Ballot.—In more respects than one, this ballot is perhaps the most important and certainly the most illuminating that has yet been conducted on prohibition, reflecting, as it does, the opinions of a body of men recording not their prejudices but their observations. The physician is certainly in a better position than the layman to observe the actual working of the Eighteenth Amendment, its benefits and its disadvantages. And a study of the table reveals some very interesting facts. For one thing, in both the small and large cities, a majority of the physicians have reported that acute alcoholism has decreased, tho the majority is much larger in towns under 5,000 than in the bigger centers. In considering this vote, however, it should be remarked that 2,775 replies were non-committal. In other words, that number of physicians could not say whether acute alcoholism had increased or decreased, and it is safe to conclude that in their communities conditions have been unchanged by prohibition. This greatly reduces the majority reporting a change for the better and would appear to balance the vote, thus bear-

ing out an observation manifest to the most casual scrutiny—that drunkenness has hardly diminished. This is stating the case moderately, for any citizen of a large city, particularly on the Atlantic border, would be greatly tempted, and perhaps with no little justice, to assert that drunkenness has visibly increased. Another thing to bear in mind is the fact that the questionnaire, tho directing attention to the number of alcoholics, does not indicate the degree of alcoholism; and it is a patent fact that, while

the number of cases may be either stationary or even slightly diminished, they are much more serious and more acute where they do exist. And it should also be borne in mind that in the voting from the smaller communities there enters the factor of a more stubborn and undiscerning prejudice against liquor, due to the tendency to qualify all alcoholic beverages under the general and derogatory nomenclature of "rum," with a consequent disapproval which is easy to understand.

That this undiscerning prejudice in the provinces played a large part in the vote cast in small towns, where the physician inevitably is influenced by local opinion, is manifest in the vote on *Question No. 2*, where the majority is much smaller. Here there appears to be a glaring *non sequitur*—tho alcoholism is alleged to have decreased greatly, the general health of the community, which should show an improvement, does not, according to the view of the physician, reveal this. In the larger centers this discrepancy is even more striking, a mere majority of 751 regarding general health as having improved. Here, again, there is

a considerable number of non-committal votes, implying no change and thus lining up with the opinion of a negative result. But most impressive of all is the distinct majority given to *Question No. 3* in the large communities, where the legalization of light wines and beer is favored by a heavy vote. In the small towns the vote is slightly against wines and beer.

There are numerous interesting sidelights on the issue revealed in a perusal of the voting cards. The rural districts show a majority for prohibition, while in the urban centers the sentiment is against the Eighteenth Amendment. The Atlantic seaboard, especially afflicted with rum-running and bootlegging, is almost unanimously, and often bitterly, against the present régime. Tho the cards called for only a *Yes* or *No* reply, many doctors in cities along the Atlantic did not confine themselves to such a brief reply and wrote lengthy marginal comments, the tenor of which was in numerous instances violently critical of the attempt to legislate a nation into virtue. The fluctuation in the voting leaves the issue only vaguely defined, but the vote in favor of light wines and beer, the diminished majority reporting improvement, and the considerable non-committal vote, taken as a whole, hardly indicate a result which may be qualified as conclusive even by the most enthusiastic of "wets."

In conclusion, we deeply regret that we are unable to include in this number a very remarkable and complete analysis of the returns from the above questionnaire, which has reached us just as we are going to press. This article takes up the replies to the various questions in comprehensive detail, and is an admirable and scholarly discussion of every important phase of the public health effects of prohibition as disclosed by the responses received.

This article will appear in our next (February) issue, and we are confident it will prove a valuable contribution on the attitude of physicians toward the great problems of prohibition as they concern the health and well being of the people.

However, it is refreshing to see the lively interest shown in such a critical issue by the doctors of the country, and the Dior Chemical Company should be complimented on once more revealing to the public the increased concern of American physicians in

matters touching upon the health of their communities.

Back to Methuselah.—Early this month at the Lincoln Hospital, the Bronx, there was born to Mrs. Henrietta Stone, aged seventeen, a boy, normal in every respect except that he had a full set of teeth, upper and lower. The child died two hours after birth. Numerous local physicians called at the hospital to see the child and to take X-ray pictures of the phenomenon, agreeing that the case was a unique one. To the medical man who has read Bernard Shaw's extraordinary new play, "Back to Methuselah," however, the case, aside from its professional interest, suggests the possibility, however remote, of a more practical aspect to Shaw's amazing contention than would appear at first blush. In the preface to the play, Shaw takes issue with the Darwinian theory of natural selection and reverts to the older Lamarckian theory: that modifications in human evolution occur not as the achievement of nature and circumstance, but as the work of the human will, the body assuming the developments which the will imposes on it. For Shaw the tragedy of life lies in the fact that we spend the better part of it going thru an unnecessary repetition of the evolution of the whole race, the period between birth and manhood or womanhood being only a hurried summary of centuries of development, the adult emerging into only an infantile state of intelligence when death intervenes to halt his progress. Life, he says, is too short; the orthodox span of three score and ten years is insufficient. At fifty or sixty, when the brain finally reaches a slight measure of competence, the body is decaying and is no longer able to sustain it. Yet man could live as long as he likes, not by drinking buttermilk, but by merely wishing it hard enough. In the course of the play, a group of persons, by wishing it hard, are able to increase the span of life to three hundred years. The body remains young, the brain continues to develop, and at the age of two hundred and seventy-eight, men and women begin to show a degree of wisdom which previously they were never able to attain. Later in the play, this span of life still being too short, it is extended to one thousand years. Children are hatched in

eggs and they are born mature. In one act a girl is hatched. When she is twenty minutes old she has already attained the flapper stage, begins to flirt, falls in love. At the age of two years, humans already begin to throw off the silly illusions of childhood. At four, they are adults. This effect is achieved by crowding into the embryonic stage the development which previously required a normal lifetime. In his preface, Shaw regards this concentration of evolution into a few months as a plausible achievement of the future. Perhaps he submits this theory with his tongue in the cheek, as is the Shaw custom, but he does so with such convincing logic and with such a clever array of scientific support as to make even the skeptic wonder if it is outside the range of the possible; whether, not in the immediate future but in the centuries to come, man will attain to a higher degree of development while yet in the embryonic stage, to emerge from the womb with his obligations to evolution already fulfilled. Perhaps in the far future children will be born with full sets of teeth, with a digestive system capable of adult nourishment, with a cerebral system capable of operation—ready in every respect to meet the problems of life from its first day. The tendency of evolution is in that direction, at any rate, and Shaw's fantasy may be more accurately prophetic than would appear. The phenomenon of the Lincoln Hospital may be the commonplace of tomorrow.

Science and Religion.—When Bernard Shaw attacks the Darwinian theory of evolution, he does so to advance a pet theory of his own, and his attack is hardly such as to distress the scientific world. But recently the Darwinian theory has been attacked in circles hardly inclined to advance a better theory to supplant it, circles interested less in science than in some other purpose, which they qualify as religion or education. These attacks have grown in frequency and in violence of late, and not only has the theory been criticized, but there has been interference, which cannot be described otherwise than malevolent, with educators whose calling it is to teach a principle which they themselves have accepted only after the conviction of its scient-

tific accuracy. Influence has been brought to bear, from quarters with a very mistaken idea of their social mission, to intimidate scientists where it may be difficult to discredit their teachings, and the basis of this intimidation has been generally religious. The effect of these attacks has become so menacing to the stability of our educational system that it has become necessary for the Council of the American Association for the Advancement of Science, at its recent congress in Cambridge, to vote a resolution upholding the theory of evolution as one of the fundamental principles of science and condemning severely ill-advised attempts to intimidate those who teach the theory in a professional capacity. The resolution closes with the following impressive paragraph: "The Council of the Association is convinced that any legislation attempting to limit the teaching of any scientific doctrine so well established and so widely accepted by specialists as is the doctrine of evolution would be a profound mistake, which could not fail to injure and retard the advancement of knowledge and of human welfare, by denying the freedom of teaching and inquiry which is essential to all progress." This admonition to hostile elements in the social body, whose activity can in no way be interpreted as constructive criticism, however loudly they may proclaim it as such, is none too timely and, if anything, it is too moderately worded. In this country we have fallen too often of late into the error of thinking we can suppress an idea by either intimidating its defenders or proscribing it by law, and it is much too late in the day for religion to adopt coercive measures where it fails to convince by logic. The modern clergyman has kept apace with the times and, if he has not frankly embraced the scientific interpretation of certain biblical events, he has at least taken the stand that science and religion do not necessarily clash. Yet any attempt, by clergyman or layman, to submit biblical facts to a scientific test, has met with prompt resistance, tho this attempt might be inspired with the faith that religion may be strengthened by allaying itself with science. There have been critics of certain religious tenets who leaned toward science and away from what they considered superstition when the two clashed, without feeling that religion would

be any the worse for a sounder recognition of scientific fact; but such a tendency has invariably been met with hostility of a sort to discredit religion rather than to help it. Threatening a clergyman or educator with depriving him of his livelihood because of so-called heretical beliefs which are consistent with scientific progress is hardly inclined to advance the cause either of religion or education. It is idle to maintain that religion and science are not contradictory when every attempt to interpret the Bible scientifically is at once repressed. And it is vicious to frustrate all attempts to make religion coincide with science by steps to deprive ministers and educators of their positions and livelihoods. Such measures are subversive of all progress and the Association for the Advancement of Science has taken a commendable course in expressing its aversion to these methods.

Observed from a wider angle, the persecution of progressive clergymen and educators is but a symptom of a reactionary movement manifest all over the world. The war and its after-effects appear to have given both strength and courage to elements which previously had not the impudence to flaunt their hindering influence openly. For reasons hardly clear, these elements have become outspoken and fearless. A notable instance is the attempt by the American Defense Society to prevent the Moscow Art Theatre troupe from appearing in this country. The reason given for opposing a group of artists without peers anywhere is that their profits were to be turned over to the Soviet Government for propaganda—as stupid and unimaginative a pretext as was ever invented. The great and deserved success of the company in New York is proof that the public can sometimes maintain a level head in the face of such reactionary absurdities. The great popularity of the Moscow Art troupe should be a source of optimism to liberal minds in this country—it proves that art and progress in general may be helped more than hurt by the interference of narrow-minded groups, that a sound theory or a great truth is advanced by the publicity opposition gives it, while this publicity reacts unfavorably against those very elements which employ it in the hope of clogging the wheels of progress.

Hogs, Babies, and a Challenge.—Mr. Alfred W. McCann, pure food authority of the New York *Globe*, has issued a spirited challenge to Congress. Mr. McCann throws down the gauntlet in no mistakable terms. "For fifteen years," he says. "Congress has not taken a single forward step in the matter of pure food legislation, but, on the contrary, has on countless occasions taken a long walk backward. What Congressman will take issue with this assertion?" Mr. McCann issues this challenge at the conclusion of an article in which he shows indignation over the amazing situation in a country which prides itself on its progressiveness and yet spends fortunes on breeding better pigs but will not make more than a lazy and ineffectual effort to breed better babies. Many months ago, in these columns, we called attention to this kink in the human mentality, but being manifestly less optimistic about human intelligence than Mr. McCann and more accustomed to its strange vagaries, we were inclined rather to sad mirth than to robust indignation. However, a hint may be better than a nod, and a kick may be better than a prod, and Mr. McCann's vigorous attack on Congress may prove more effective than our own jeremiad about blundering humanity. Should a Congressman find the courage and the time from his arduous recreations to answer the challenge, Mr. McCann will have an easy case to prove. And, if the public should fail to respond to an exposure of Congressional obstructionism, it will more easily react to an exposure of the absurdity of man's preference for a perfect pig rather than a perfect baby—that is, provided the exposure is made without too much cynicism and with a good seasoning of chaff of the kind that slaps the public on the back while calling it a fool. For the public likes to be slapped on the back when its vacuity is being censured, thus having the comfort of feeling that the censor is including himself among its futile numbers. In his article in the *Globe*, Mr. McCann states facts manifest to a few educators but still obscure to the large public, despite the fact that they have become a commonplace. "The pasteurization of skimmed milk and whey saves hogs from tuberculosis," he says. "Adequate nourishment saves the cow from

tuberculosis. In Minnesota and Wisconsin, many farmers feed skimmed milk and whey to their hogs after pasteurization, but not before. These precautions are taken even when the farmers know they are feeding their cows as they should be fed. In New York State whole milk is pasteurized for consumption in certain cities, not at all in others. Pot-cheese is pasteurized in none. Butter is pasteurized by a few individuals. Raw butter, with its full quota of tubercle bacilli, is the rule. What is done for hogs is not done for children." Holding the mirror up to the pre-Simian public, Mr. McCann goes farther and quotes Professor T. L. Haecker, of the University of Minnesota. "Men and women," says the professor, "who will pasteurize skimmed milk and whey for their hogs while neglecting to pasteurize milk, butter and ice cream for their children deserve to be classed lower than the hogs in which they are deeply interested. If children could select their own parents, they certainly would never select those who spend time, effort and money to protect hogs and nothing at all to protect their own flesh and blood." Well, giving certain elements of the public a spiritual birch-rod-ding may be a wholesome thing for it, but we are inclined to the belief that it will prove no more effective than our own more indulgent commiseration. Besides, the sympathy of proud parents is alienated by any appeal to them to be as nice to their babies as they are to their cows and hogs. Parents do not like any parallel between their offspring and the animal world, justifying their objections, we suppose, on the score that children should be seen not herded.

Capital Punishment Again.—The execution in London of Frederick Bywaters and Mrs. Edith Thompson for the murder of the latter's husband has revived the question of capital punishment. The innocence of the parties involved, tho firmly maintained by both until the very last, does not enter into the discussion, but many critics of capital punishment are once more asking: "Does legalized murder by the State serve the end it aspires to, and will it really be effectual in preventing others from committing murder?" That has

always seemed to be the strong argument of those opposed to capital punishment, and they point to criminal statistics, ever on the increase, as proof that miscreants are never deterred by thought of the sure retribution to come. The taking of human life by the State, as an example to others, therefore falls short of its aim, they assert. It has been the mistake of those favoring capital punishment to deny the truth of this contention when evidence from all sides proves its justice; crimes have continued to increase from year to year despite the ultimate penalty exacted. The principle of a life for a life, it would seem, then, is both ill-advised and ineffectual, opponents of the principle even asserting that the State itself sets a bad example in committing murder as a punishment for murder. Previous to the execution of Bywaters and Mrs. Thompson, crowds of women marched before the prison with placards reading: "If these are hanged, the judge and jury are also guilty of murder," and "Murder cannot abolish murder." The truth of these assertions is beyond dispute, yet capital punishment continues and the law exacts a penalty which it is becoming increasingly difficult to defend as either humane or effective. Why?

The answer, which the opponents of capital punishment have not given due consideration, is that the law has no alternative and that the ultimate penalty persists, not because it is effective in diminishing crime, but because failure to exact this penalty would certainly result in an increase in crime on even a larger scale than at present. The State takes life only because failure to do so would have even worse results. Take the case of Bywaters and Mrs. Thompson. It is not very likely that any woman now living and planning to do away with her husband in order to be free to join her lover will be deterred by the example of what happened to Mrs. Thompson. But it is very likely that, had Mrs. Thompson been spared, had the State refused to resort to the ultimate penalty, such a woman would be distinctly encouraged to a similar effort by the consideration that she would be sure to escape, that no jury or judge could be found to condemn her to death. In other words, the capital punishment may fail of its purpose, lack of capital punishment would certainly act

as an incentive to many subverted minds. If legal murder by the State persists, it is only because the alternative would be much worse. The truth of this is well illustrated in the tremendous increase of crimes of passion in France, where capital punishment, particularly in the case of women, is rarely exacted. There is no question that, in many of the recent notable cases, the French women who killed their husbands or lovers were in no small measure encouraged to take this course by the fact that French juries invariably spare the lives of women who plead love or jealousy as their motive. Without holding a brief for capital punishment, it is manifest to the unprejudiced mind that the law has much in its favor; that brutal and ineffectual as capital punishment may appear, the alternative, as practiced in France, leads to far more regrettable results.

Dry Delirium Tremens.—It is one of the singular features of the change in European opinion regarding America that, while America ten years ago was liked despite her alleged materialism, she is now feared because of her proved idealism. Europeans spoke of dollar worship before the war, but Americans always had a hearty and unqualified welcome in all the capitals of the Continent. During the war and since, Europe has had convincing evidence of the invincible and outstanding idealism of the American people, an idealism which never hesitates to sacrifice large amounts of money for the slightest of high principles; with the only result that, tho the American is still cordially received everywhere abroad, there is a general uneasiness about his mental stability and a marked suspicion that he is only too apt at any moment to make his foreign hosts uncomfortable about their pet indulgences. Once esteemed as shrewd materialists, we are now distrusted as naive idealists with a passion for proselyting which makes us somewhat of a nuisance in the company of the less severely rigid Europeans. Europe follows with interest our political and social innovations, but it is quick to resent any effort to impose these innovations on the Old World. Nothing has contributed so much to foreign resentment as the recent developments in liquor legislation and the attempt to interpret and

enforce the laws of abstinence as a new Sermon on the Mount, confined to America as the chosen people to be forced upon an unwilling and unregenerate world. Until recent developments, American prohibition has been considered a boon to drawing room and banquet conversation. The comic papers abroad drew it hungrily to their bosoms and made much of it, while the more serious regarded it magnanimously as one of the queer turns American idealism can take.

But more recently, when it began to appear that this furious idealism was not to be confined only to Americans, when the diplomatic representatives of foreign countries seemed condemned to a degree of self-denial in the matter of liquid pleasure, so uneventful but important a feature of their daily lives, when it even seemed for a moment that foreigners would be compelled to suspend their habits even when three thousand miles from the shores of America and to forego their glass of wine at dinner merely because the ship in which they were sailing was a week later to touch at an American port, then Europe ceased to see anything amusing in a proselyting mania which reached its desiccated antennæ to clasp the wicked Old World in a parched embrace. Europe no longer treated the prohibition question as a matter for jest. "They are mad," cried Europe. And even Americans abroad found it difficult to defend themselves against the criticism with which they were assailed. "Prohibition in America has reached the delirium tremens stage," said one American in a burst of temper which did not quite obscure his sense of humor. Fortunately for European opinion, legislative good sense prevailed and we will after all suffer alone in our splendid and unmoist isolation. But this retreat from the original interpretation of the Daugherty ruling is a defeat, a retrogression in the magnificent forward march toward a logical conclusion to the absurdity of our liquor madness. The Daugherty decision appeared grotesque, but it was supremely logical. And if Europe was scandalized, it was merely because the Old World cannot conceive the supreme consistency of which New World idealism is capable when it forgets itself sufficiently in its spiritual intoxication.

ORIGINAL ARTICLES

THE SYMPTOMATIC TREATMENT OF TUBERCULOSIS.¹

BY

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Before taking up the principle subject of this paper, "The Symptomatic Treatment of Tuberculosis," I wish for a moment to refer to the general treatment of tuberculosis and particularly to those cases of tuberculosis which require no definite treatment. When we ordinarily speak of tuberculosis, we mean the active disease and we determine activity by constitutional symptoms, such symptoms being the evidence of toxemia caused by the tubercle bacillus and the cells which it has poisoned. Local physical signs alone of a tuberculous infiltration without constitutional symptoms do not demand active treatment, but, as Dr. Lawrason Brown sententiously puts it, "They demand only a God-fearing life." One may have extensive involvement of the lungs, as Dr. I. S. Kahn has shown in a case recently reported (*American Review of Tuberculosis*, July, 1922, page 391) with no symptoms whatever. One may have moist râles indefinitely, for example, and

yet have no symptoms indicating any constitutional disturbance. A striking case of this kind came within my experience not long ago. A young woman came under my care in 1897 with extensive involvement of the left lung, the most outstanding sign of which was abundant moist râles. After various vicissitudes, sometimes working and sometimes taking treatment, she spent seventeen months at the Rutland Sanatorium, when she was discharged on October 20, 1900, as an "arrested case." At that time I examined her and found the same abundant moist râles in the upper half of the left chest. On February 20, 1922, over twenty-one years subsequently, I had the opportunity to examine her again and found the same physical signs—abundant moist râles in the left chest—and yet during these twenty-one years she said that she had been well and working and had no symptoms, neither cough nor expectoration. This experience accords with that of Paterson, (*The Shibboleths of Tuberculosis*, New York, E. P. Dutton Co., 1920, page 73) that crepitations (râles) may remain for many years where a lesion has healed, and do not mean active tuberculosis. Again the presence of tubercle bacilli even does not necessarily mean active disease requiring treatment, and bacilli may exist for years without any other signs or symptoms as has been observed, and probably more cases

¹ A paper read before the Tuberculosis Institute of the Boston Tuberculosis Association, October 7, 1922.

would be detected if everybody had his sputum examined. Paterson (*The Shibleths of Tuberculosis*, page 35) says that he has followed up and kept in touch with ex-patients who have had bacilli in their sputum for several years and who have been able to perform their work and have kept in perfectly good health, except for minor ailments, all the time, and, he continues, "I have known many hundreds of patients who have been discharged from sanatoria as fit for the hardest kind of work and who still have had the bacilli present in their sputum." We are all familiar with the chronic fibroid form of tuberculosis in which there are no constitutional symptoms and the only evidence of its existence is more or less dyspnea on exertion and an occasional hemoptysis with no after results. I have mentioned these examples to emphasize my statement that whatever the local physical signs may be, if there are no constitutional symptoms indicating activity, no systematic treatment is called for, only "watchful waiting" and keeping the patient under observation.

Now a word as to the general treatment of active tuberculosis with symptoms. One must always keep in mind the end aimed at. It can be expressed in one word, as Browning says, "Scar." Scar tissue formed about the tuberculous process, if firm enough, will incarcerate and strangle the tuberculous process and prevent it from disseminating its toxemia and producing constitutional symptoms. Scar formation then is the ultimate goal of treatment, and as yet we know of no better way of producing this desired result than by what we call somewhat erroneously the "open-air treatment," which includes anything and everything which will bring up to its highest capacity that unknown something which

we call "resistance" and maintain it. With open air, which is one of the legs of the tripod upon which all other treatment rests, there goes along the two other elements of treatment, namely, food and rest, and here I only wish to emphasize rest. In my experience the supreme importance of rest—absolute rest if there is any temperature, and much rest without it—has not always been appreciated. There comes a time, indeed, after all active symptoms have subsided when exercise tests are proper and indicated, but they should be instituted with great caution and careful supervision. I have only to call attention to the careful methods of prescribing and regulating exercise in our best sanatoria. I shall have occasion to refer later to this vital matter of rest in speaking of fever.

What about general medication, one may ask, in the course of the general treatment? I am aware as I speak of medication that most specialists and sanatoria have little or no confidence in any drug of a general nature, and I have held that opinion, but I am not so sure that some medication may not be of more or less value. I feel sure that psychically such is the case with certain classes of patients. There was no more active or experienced observer or of a more judicial mind than Dr. Austin Flint who wrote his book on "Phthisis" some fifty years ago. In that day there were three remedies employed for tuberculosis—cod-liver oil, alcohol, and hypophosphites, and the first two were used in heroic doses. Dr. Flint speaks of one patient who took three gallons of cod-liver oil, and of a young woman who took a pint of whisky a day for two years, and, he adds, that both recovered. In summing up the evidence from his experience with regard to cod-liver oil, Dr. Flint very conservatively says

that its limited usefulness is most consistent with its being a nutriment and not a drug. Recent investigation suggests that cod-liver oil has some influence as an inhibitory agent on the tubercle bacillus as well as being a useful fat. The hypophosphites are still used as a general tonic, and Dr. Flint's experience with these brings him to the conclusion that they appear to be useful. He is most definite with regard to alcohol. "Of the usefulness," he says, "of alcohol, if given in considerable or large quantities, my studies have furnished striking examples of its value." Incidentally Dr. Flint states the interesting fact that he has never known of a single case of a patient becoming an addict to the use of alcohol. It is not my intention nor is it either the scope of my subject to discuss medication in the general treatment of tuberculosis; I only want to mildly suggest that certain drugs like "medicinal tonics" as Dr. Pottinger calls them, may have some value in the general treatment of tuberculosis. "The patient is a human being," says Fishberg, "and when we consider the human element we find that as a rule he has no confidence in a physician who has no remedy for his ailment." "This is not only true of the ignorant, but also to the same extent of the supposedly intelligent patient." "It cannot be denied," he continues, "that in many respects medicaments properly administered act by psychic suggestion."

It may be well here to recall a report of the Committee on Medication in Tuberculosis made at the annual meeting of the National Tuberculosis Association in 1907 in which the Committee says that it believes that no directly curative medication has yet been discovered, but that many drugs greatly improve the general condition by ameliorating different symptoms and indi-

rectly limit the extension of the disease or bring about fibrosis. "In view of this fact the Committee deplores the prevailing tendency to ignore the use of drugs regardless of their character or special indication in individual cases."

Coming now to my immediate subject, "The Symptomatic Treatment of Tuberculosis," I shall consider briefly the following: (1) Cough; (2) hemoptysis; (3) fever and night sweats; (4) digestive disturbances; (5) pain; (6) depression of spirits.

Cough.—Cough is present in the great majority of cases to a greater or less degree. It has been divided into productive, that is, accompanied with expectoration, and non-productive or irritative cough. Both kinds, however, are really from the same cause, namely, some secretion somewhere in the respiratory tract. In the one case this secretion is abundant and fluid enough to be expectorated by the cough, and in the other it is so scanty or tenacious as to only cause an irritation and cough without results. When the cough is only of a moderate degree no treatment is indicated other than the general open-air régime, for as the general condition improves so will the cough lessen. It is a mistake, in my opinion, to treat a moderate cough with drugs altho the patient often begs for some sedative and one may feel obliged and justified in giving some simple remedy or placebo for its psychic effect, but it should contain no opium. Something may also be accomplished by discipline and training in the suppression of all unnecessary and non-productive cough. I well remember Dr. Dettweiler's reply to me when I remarked to him at the general dining table at his sanatorium in Falkenstein, that I was surprised that there was no coughing at the table altho I knew they were all tuberculosis patients. "Oh, I tell them," he replied, "that if they cough they cannot come to the table." And this fear of being deprived of the companionship of others in eating had the desired effect. Sometimes by keeping the mouth tightly closed and taking a few deep breaths thru the nose,

the tendency to cough may be allayed and the explosion avoided. There are other cases, however, and not a few, where the respiratory tract becomes so irritated and sensitive that the cough becomes distressingly frequent, sadly interfering with the patient's rest both by night and day and wearing him out by the excessive exercise, for coughing is hard and exhausting work. I often tell my students to make themselves cough continuously for five minutes and then they will realize the effort and strength expended in coughing. Such a condition is a serious menace to the patient's chance of arrest and something more will have to be done than the open-air treatment alone. Furthermore paroxysms of coughing not infrequently result in emesis, the so-called "emetic cough," but of this I shall speak later. One at first tries various simple remedies such as chloroform water or tablets, lactucarium, acacia, flaxseed tea, and some of the sedative syrups, that of almonds or wild cherry, or other mild innocuous remedies which readily suggest themselves. Inhalations or sprays are serviceable if the upper respiratory tract is irritable. Occasionally creosote or its derivatives may be of aid, and I recall two cases in which very striking results were produced by the use of creosote. External applications such as mustard plaster, iodine, or even a small blister are other expedients. Failing with these simple remedies, and with a considerable number of patients they will fail, some form of opium will have to be employed as the lesser of two evils if we are to secure to the patient the benefits of the open-air treatment and needed rest. Obviously the milder derivatives of the drug should be chosen. In my experience I have found codein the most desirable one in $\frac{1}{8}$ or $\frac{1}{4}$ grain doses; others use heroin or dionin. If possible the opiate should be given only at night and it may secure to the patient several hours of quiet restful sleep. If used during the day it should be given only intermittently and omitted as soon as the cough improves. In incipient or the earlier cases this condition of frequent and harassing cough is less likely to occur, and if possible one should endeavor to mitigate it by other means than opium. It is generally in the advanced cases that one meets with this distressing symptom

which demands the opiate. One must always bear in mind the danger of habit formation in employing any form of opium. In the so-called emetic cough mentioned above where violent paroxysms of coughing soon after eating excites emesis and the loss of the meal, one is confronted with another serious result of coughing which demands careful attention. The meal most frequently lost is breakfast and when this occurs, my practice is to give the patient on awakening a hot drink of some kind—a cup of coffee or tea, hot milk or a warm alkaline drink. This will usually excite the coughing and the elimination of the accumulated secretions and subsequently breakfast may be taken with less likelihood of losing it. Again one is advised to substitute several small meals during the day instead of the three more abundant ones and to lie down immediately after eating and remain perfectly quiet. Sometimes a piece of ice in the mouth is of value. Of medication, good results have been obtained from chloroform, a few drops well diluted, or cocaine, before meals. Martinet and Kuss report the most favorable results from menthol, when taken after eating, in solution. As a last resort codein or heroin may have to be resorted to, taken an hour before meals.

Hemoptysis.—Hemoptysis, as we know, may be the first and last event in a case of tuberculosis, and may occur all the way between. It may usher in the disease, so far as the patient knows, and it may usher the patient himself out. In early or moderately advanced cases I have never seen a fatal immediate result, and in advanced cases with cavity I have rarely if ever seen anything but a fatal result. Various pathologic or physiologic conditions are assumed as exciting causes—hypertension, hypotension, congestion, ulceration, etc., but the basic cause after all is the rupture of a blood-vessel however small which has been weakened by the tuberculous disease. In the vast majority of cases of hemorrhage in the early or moderately advanced stages, the bleeding would subside without treatment, but we do not dare to trust to nature on account of the fright of the patient and his entourage. Treatment is demanded by them. The conventional treatment is rest in bed, ice, cold food, and opium, and I

doubt if any of these are essential except rest and that for a less time than is usually considered safe. How many cases of hemoptysis occur when the patient pays very little attention to it and keeps on in his usual course of life without rest and treatment, and the bleeding subsides as quickly as it would if he had taken the regular treatment. Still as I have said we must treat hemoptysis or lose our patient, not from a fatal result in the earlier cases, but from the loss of confidence in us by the patient and his friends from our *laissez faire*. Furthermore the loss of a considerable amount of blood is of course a debilitating influence in an individual already weakened by the disease. I do not see the necessity for keeping the patient in bed for any fixed period. When the sputum has been blood-free for a few days he can get up and walk about the room with safety, I believe. Neither does it seem to me that it makes any difference exactly what position the patient assumes in bed, whether it be the semi-reclining or recumbent. The patient can be left to take whatever position is most comfortable for him. As to food other than hot drinks, I see no reason why the food should be cold as usually advised. It seems reasonable that at the first food should be given rather sparingly. Ice by the mouth and ice bag on the chest is something visible to do but I have never been convinced that it is of any value. If there is comparative hypertension as shown by the sphygmomanometer the nitrites would appear to be indicated, and there is evidence enough to prove their value. Nitrite of amyl, nitroglycerin or sodium nitrite may be employed. The more rapid in its effect is the nitrite of amyl as we know. If there is evidence to indicate hypotension, adrenalin or pituitrin by injection is indicated, and there is again evidence to show that they have been of value. In the one case we desire to reduce the arterial pressure and favor clotting, and in the other case to increase it and favor vasoconstriction in the supposed passive venous conjection. In the former condition, that of hypertension, my custom is to get a full dose of salts within the first twenty-four hours. Probably some opium will have to be given—more to allay the nervous phenomena than for any other reason—but as

little as possible should be employed and that of the milder derivatives. Codein is the one of my choice. Morphine often given in large doses is, I believe, not only unnecessary, but often productive of harm, for it may lead to aspiration pneumonia of an infective *nature* from the effused blood retained in the lungs. Various other remedies such as the lactate or chlorid of calcium and blood serum have been recommended, but I have not found them of value or necessary in the ordinary cases of hemoptysis. When the hemorrhage occurs in the advanced stage of the disease from a ruptured aneurysmal vessel in a cavity, the prognosis is grave and the result generally fatal. Of course the various remedies mentioned can be tried but the only efficient means of stopping such an overwhelming hemorrhage is artificial pneumothorax, and for such an emergency Murphy, quoted by Fishberg, says, "This can be done with a subcutaneous needle. The sharp point of the needle is rubbed dull on a brick and inserted into the pleural cavity of the side from whence the hemorrhage is supposed to come. A piece of absorbent cotton is placed over the outer end of the needle and the finger held over this. When the patient inhales, the finger is removed and when he exhales the finger again covers the end." This seems very simple, too simple almost to work. I have never tried it. I need hardly mention the well-known experience of salt and the ligation of the extremities. It is well to repeat that all ordinary hemorrhages cease of their own accord in most instances. Many remedies and procedures have been recommended and all have been successful in the hands of those who have recommended them because of the general fact that the hemorrhage ceases of its own accord and the remedy gets the credit.

Fever.—Fever in tuberculosis is the result of the active process of the pulmonary lesion producing toxemia. As in all active infections fever is one of the constant concomitants of the toxemia and the only way to eliminate the fever is to stay the process, and our one great means of doing this is by rest—absolute bed rest. All authorities are agreed that no other means, with one exception which I shall mention later, will permanently do this. No drugs

can change the general condition of activity. They will only give an ephemeral deceptive remission. The fever may last long, indeed may never subside, but the only chance is rest, and this may have to be continued for many months. I recall a case where the patient had absolute rest in bed in a sleeping porch for nine months, and then finally the fever was conquered never to return. In my experience I find that the supreme importance of absolute bed rest in fever is not always fully realized. The patient is allowed to get up and sit in a reclining chair, for example, to go to the bathroom, etc. This is not complete immobilization, "typhoid rest," as Paterson calls it. Paterson goes so far as to prohibit talking or any active movement of the limbs on the part of the patient. I mention this to indicate how extremely important those of long and large experience regard this absolute rest in fever. The best conditions for carrying out this rest or immobilization in fever cases is in a sleeping porch or in a large, well-ventilated room with some sunshine and a nurse trained to the appreciation of the importance of this immobilization in all its minute details. One naturally asks, what degree of temperature demands immobilization? This depends largely upon the difference between the morning and the afternoon temperature. The patient with a subnormal temperature in the morning may have an afternoon rise of but little more than the usual normal temperature and yet the difference between the two may indicate fever. If, however, the morning temperature is normal, a constant afternoon temperature of 99.8 or over calls for bed rest. After the temperature has subsided for several weeks then the patient can begin to move about a little, but this should be very cautiously undertaken and very slowly increased. There are cases with which we all unfortunately have had experience in which no cessation of the fever occurs after long immobilization, and such cases seem to progress rapidly toward a fatal result. In such conditions of long and constant fever and evident rapid progress of the disease, artificial pneumothorax offers us a chance, and I have seen it turn the scales in the right direction and cause a disappearance of the fever and acute symptoms, and the ultimate arrest of the dis-

ease. As I have said, no antipyretics are of any permanent value in the fever of tuberculosis, but one drug I have occasionally employed for three purposes: (1) The fever may cause the patient great discomfort, headache, backache and general malaise. To relieve these symptoms even for a short period is worth while provided no harm is done. (2) Frequently the fever may produce anorexia and if we can by artificial means reduce the fever for a day or two even, the appetite may return and something has been gained thereby, and (3) I sometimes think that if the temperature can occasionally be held down for even a short time the resistance may be improved and there is more likelihood of a permanent diminution of the temperature. The one drug I employ for this purpose is pyramidon in five- or ten-grain doses in the form of tablets, a single dose in the twenty-four hours. It is also combined with camphoric acid under the name of pyramidon acid camphorate, thus fulfilling two purposes—a temporary reduction of the fever and an amelioration of night sweats—the usual accompaniment of the fever. In brief, in the majority of the cases of fever absolute rest under open-air conditions will eventually bring down the temperature if patiently persisted in. If, in a few cases after long trial the fever still persists, then as a last resort artificial pneumothorax is to be considered if the lung can be successfully collapsed. The result is most striking—the fever disappears, and with it the other unfavorable symptoms.

Night Sweats.—I have spoken of night sweats as the accompaniment of fever. When the fever disappears, the night sweats disappear, but in themselves they are very enervating and discouraging and call for attention. Besides careful arrangements for open-air sleeping without too much covering there are various procedures which will aid: A glass of milk with several teaspoonfuls of brandy on retiring, first suggested by Brehmer, I believe; bathing the patient with water and vinegar on retiring; observing the time when the sweating begins and waking the patient a little before this time and repeating the milk and brandy, or an ounce of whisky. If the sweating occurs the night clothes should be replaced by dry ones. Of drugs I have

found two the most useful and with the least harmful effects, namely, agaricin, $\frac{1}{10}$ of a grain an hour or two before bedtime, and camphoric acid, 20 to 30 grains. I have already referred to the combination of this drug with pyramidon under the name of pyramidon acid camphorate.

Digestive Disturbances.—The proper feeding of the tuberculous patient and the care of his digestion is obviously one of vital importance. "The consumptive who does not eat," as someone has said, "is doomed." How shall we feed our tuberculous patient, and what changes shall be made in his diet in order to ensure the maximum nutrition? In a word, if the digestion is normal, an amply mixed diet in three daily meals fulfills all indications. "Ordinary every-day food," says Sabourin, "is sufficient in the treatment of three-quarters of all tuberculosis patients. If such food proves unsuitable," he continues, "the patient must have some local or general trouble which is at the bottom of the difficulty." Because a patient has tuberculosis and some digestive disturbance it does not follow that the latter is caused by the former, but the digestive disturbance becomes more serious because it affects unfavorably the tuberculosis, hence the importance of correcting the faulty digestion. It has been the custom and is all too much so now to order milk and eggs as a routine measure when active tuberculosis has been diagnosed; many a fairly normal appetite has been greatly impaired if not destroyed by the inordinate quantity of these two articles of food which the patient is told to take or thinks he must take. To surfeit one with any article of food causes a great repugnance to it and is likely to destroy the appetite for any other. Eggs and milk are excellent articles of diet when taken in moderation with other food, if the patient has no antipathy to them. When, however, three good meals can be taken with plenty of meat, supplementary doses of milk and eggs are, in my opinion, unnecessary. Milk and eggs in abundance are for those who do not eat well or cannot take other food. The ordinary diet, however, must be well served, well cooked and appetizing, and not monotonous. Every well-ordered sanatorium has its dietitian both for properly arranging the ordinary diet as well as for

special diets for the digestively lame ducks. In private practice the physician must be his own dietitian and something more is demanded of him than simply directing the patient to eat well and take plenty of milk and eggs. He must carefully supervise the menu and keep a close watch upon the amount of food the patient takes. Walther, the German specialist, always served his patients himself at the table and saw to it that they ate what he gave them. It is well to bear in mind Dettweiler's saying, "My kitchen is my pharmacy." A word in regard to cod-liver oil as an auxiliary food when such is needed. Recent researches have shown that cod-liver oil possesses to a high degree fat-soluble vitamines and hence its value over other forms of fat when it can be taken without gastric disturbances. The routine ordering of between meal lunches when the patient is eating his three meals well is unnecessary and not infrequently is destructive of appetite. Paterson considers that meat has some specific action in pulmonary tuberculosis; and the French school holds the same opinion but considers rare or raw meat the most useful form. Paterson says that the women in Wales who ate meat with much greater zest and in greater quantities than did the women patients in England made better progress than the English. In fever no change in the food should be made, but the full ordinary diet given. If anorexia exists caused by the general toxemia of the disease, rest in the open air with careful attention to the diet will generally restore the appetite. If drugs are indicated, some of the bitter tonics such as nux vomica, gentian, cinchona, cardamon, or the hypophosphites with strychnia may be employed. If there is hyperacidity alkalies are indicated, or if achylia, hydrochloric acid and pepsin. Fishberg highly recommends creosote for anorexia. I may interject here that in very many of the disturbances of the digestion the regulation of the diet, constant open-air life and attention to the details of the general treatment will often bring about favorable results without recourse to drugs. In combating constipation so common in the tuberculous, every effort should be made to obviate it by the diet, for example, adding various kinds of fruit, bulky vegetables and plenty of water.

"The patient who is willing every morning," says Sabourin, "to devote fifteen minutes of his time to the exclusive purpose of securing a bowel movement will be quite surprised to find after a few days that he is getting the desired results." If finally drugs are to be used, cascara, agar-agar, and compound licorice powder are some of the most useful and harmless. Of the various gastrointestinal disturbances such as distention after eating, flatulence, pain, nausea, simple diarrhea, etc., these must be combated by the regulation of the diet or special diets and appropriate medication as in such conditions unaccompanied by tuberculosis.

In spite of various gastrointestinal disturbances the patient must be importuned to eat and eat enough. I often say to the patient that he has but one stomach however incompetent he thinks it is, and, therefore, if he is to overcome his disease he must make the best of his poor digestive apparatus. I tell him to go into the market and look at a piece of tripe—the interior of an animal's stomach—and observe its tough consistency. I tell him his own stomach is like that, capable of doing good, hard work, altho it may sulk at times. Therefore, he must keep this organ at work by putting into it sufficient food and when it realizes that its work—digestion—is to be done it will quietly settle down to its task.

No pains or effort is too great in securing a sufficient intake of food and satisfactory digestion and assimilation. Neither open air, rest or any change of climate will avail if this fails. The tuberculous individual who is not properly nourished cannot expect to overcome his disease.

In the various nationalities with which we have to deal both in the sanatoria and in the treatment at home, attention should be given to the kind of food and its preparation which the foreigner has been used to. How frequently it occurs for example, that the Russian Jew refuses to go to the sanatorium because, as he says, he cannot get "his kind" of food to which he is accustomed. A study should be made of the peculiarities of material and the preparation of the diet of different nationalities, and this knowledge should be used in providing so far as possible such manner of

food as the Jew, the Italian, the Armenian, etc., are used to. One has only to try and partake of a meal prepared by any of these foreign folk to realize how strange and unappetizing our kind of cooking seems to them.

Pain.—The last two symptoms to which I shall refer and which deserves a brief consideration are pain and depression of spirits. In my experience pain in the chest is a very frequent occurrence with the tuberculous. One will complain of a pain in the chest, sometimes extending into the shoulder, as the only symptom, and the one which brings him to the physician and which causes him to be apprehensive that he is tuberculous. Generally this pain is confined to the upper chest, front or back, sometimes on one side alone, and sometimes on both sides. Various causes have been adduced as the pathogenesis of this pain such as a localized pleurisy, neuralgia, muscular rheumatism and diseased lymph-nodes. Most of the patients who complain of chest pain, I have observed, are more or less neuropathic. I have rarely been able to find any underlying cause for this pain or any physical evidence of tuberculosis when it is the only symptom complained of. My experience coincides with the conclusions of Langstroth quoted by Fishberg, that this hyperalgesia is practically of no importance in diagnosis or in localizing pulmonary lesions. As to treatment, there are various external applications that may be tried—a mustard paste, iodine, a belladonna plaster, heat, and dry cupping. Of internal medication if any is required, the most useful in my experience, are the salicylates, aspirin or phenacetin. Opium in any form is rarely required.

Depression of Spirits.—Every physician who has had much to do with tuberculosis realizes the importance of the mental attitude of his patients while taking the "cure." Many patients, as we know, develop an excessive optimism, while others are given to despondency or depression of spirits. To obviate this latter condition and to prevent the patient from brooding over his disease, various diversions are employed in the sanatoria—music, moving pictures, occupational therapeutics, etc. The Municipal Sanatorium of Chicago employs a director of music and recreation.

The personality of the physician has as much or more to do in relieving the ennui and mental depression of the patient than any other instrumentality, provided he has the patient's confidence and possesses some knowledge of psychology. A heart-to-heart talk with his physician in which the patient is given time to unburden his heart will often bring relief. Sometimes tenderness and sometimes firmness is indicated. "Hope springs eternal in the human breast," says the poet, but often this hope has to be watered and tenderly nurtured in order to spring forth, and no one can do this so well as the sympathetic and wise physician. Occupational therapeutics have of late come into prominence as an effective psychical influence in relieving the patient of his despondency and their value is great. The reading of poetry or simple tales of an unstimulating nature is another devise for driving away worry; simple games, sketching, study of flowers or other forms of vegetable life are other means. Often one's hobby or taste is of such a kind that one can pursue it in his reclining chair. An active mind even when the body is at rest must have something to occupy it or it may turn to introspection and despondency.

After all that I have said, the most potent influence in dispelling gloom, inspiring hope and stimulating courage is the physician himself. Thousands of their former patients venerate the names of Trudeau and King, whose beneficent presence, sympathy, and optimism rescued them from the depths of despair and led them to the Promised Land of recovery. They healed not only the sick bodies of their patients but their broken spirits as well. "In his hour of need," says Dr. Trudeau in his address on "Optimism," "the patient has no means of judging of the physician's intellectual attainments, but it is the faith that radiates from the doctor's personality that he seizes upon and that is helpful to him. Any encouragement that emanates from the physician will help keep up the patient's courage and carry him thru the long days of illness and suffering to recovery, and when recovery is impossible, if the doctor's optimism, that is, if his faith is of the kind that extends to the future not only here but hereafter, it may dispel for the patient much of the darkness and despair which brood over the end of life and perhaps even illumine for him that vast forever otherwise so shrouded in impenetrable gloom."



THE IMPORTANCE OF ORTHODONTIA IN CHILDREN.

If the infant or child is obliged to keep its mouth partially open, the tongue will lie flabbily on the floor of the mouth. After the removal of the adenoids and tonsils, nasal breathing is made possible, the lips close more readily, the tongue can then take its position between the arches of the lower or upper jaws. The force of the tongue is one of the natural orthodontic factors in widening and developing the arch of the upper jaw so that the septum may have the proper distance for its normal development. If the jaws are not symmetrical and do not close harmoniously then orthodontic procedures should be considered as early as the fifth to the sixth year, for the proper occlusion of the two jaws promotes natural development of the facial bones, which in turn means a natural development of the nasal bones and nasal septum. The combination of all these procedures if undertaken in early life will aid towards the normal development of the jaws, teeth and nose.—Myron Metzenbaum (Ohio State Med. Jour.).

WEIGHT REDUCTION. FURTHER CONSIDERATION OF ITS EFFECT ON HIGH BLOOD-PRESSURE.

BY

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Since writing the article entitled, "Weight Reduction and Its Remarkable Effect on High Blood-pressure," which appeared in the *New York Medical Journal* and *Medical Record*, June 21, of the previous year, the writer has had further interesting cases which deserve to be reported to the medical profession.

It was during experience with weight reduction thru dietetic adjustment that the fall of blood-pressure was first noticed. After attention had been attracted to this point, closer observation of the blood-pressure and of other symptoms of overweight was made. The conclusions of the previous article resulted from watching these cases over a period of three years or more. The following is a paraphrase of these conclusions:

1. Weight reduction is almost uniformly accompanied by reduction of high blood-pressure greater than could be obtained by the use of drugs.

2. The first week a drop of 20 points in the systolic blood-pressure of those starting with a pressure around 200 is frequently encountered. During the course of the treatment an average reduction of 50 points is obtained. When the diastolic reading at the beginning is between 110 and 120, a drop to between 90 and 100 is the average at the conclusion. For those with systolic blood-pressure not above 150 in the beginning, a drop to between 120 and 130 can be expected.

3. Results frequently continue after the conclusion of the treatment, if a normal diet is followed.

4. If Bright's disease, focal infections, and diseases manifestly requiring other

treatment are excluded, weight reduction as a therapeutic measure may be relied upon to lower high blood-pressure.

5. Shortness of breath, palpitation, edema of lower extremities and albuminuria due to congestion of the kidneys are quickly relieved.

6. Headache due to high blood-pressure (this is one of the most persistent forms) is relieved.

To show the permanence of the results of dietetic control in high blood-pressure reference will be made to some of the cases cited in my previous article.

Case I.—Mrs. J. C. consulted me again on July 17, 1922, about one year after the last previous visit, complaint headache. This was quickly relieved by catharsis. Blood-pressure reading was diastolic 90, systolic 166. One week later the systolic reading was 152. As the patient was suffering from a headache at the time of the first visit the second reading would better represent her average for 1922. This patient came under treatment for the first time in January, 1919, with a weight of 180 pounds, 12 ounces, blood-pressure diastolic 110, systolic 204. A reduction of weight was reported in March of that year of approximately 8 pounds and diastolic blood-pressure 18 points, systolic 42 points. Readings in 1921 and 1922 were equally good, the weight having dropped still further to below 160, the blood-pressure averaging diastolic 90, systolic under 160.

Result.—Patient who was seen every year from 1919 up to and including July and August, 1922, obtained reduction in blood-pressure thru dietetic control from diastolic 110, systolic 204 to diastolic 90, systolic 160 and this result has remained for three years after she first came under treatment, all attendant symptoms being at the same time relieved.

Case II.—Mrs. C. H. V. Examination a year ago showed that the blood-pressure was still down, patient having been under observation at intervals since 1917. Other members of the family have been seen this summer and from them it is learned the patient is still free from former complaints.

Result.—Weight was reduced from 240 to 184. Blood-pressure systolic from 190 to 154.

Case III.—Mrs. J. L. S. To quote from the previous article, "In eight months' time weight was reduced 30 pounds, systolic blood-pressure 24 points and symptoms, including dizziness, fainting and dyspnea on exertion were cured. This was in 1920. Her weight at the close of treatment was 171 pounds, systolic blood-pressure 126. Patient was quite well until a recent visit during which from overeating her weight had increased to 190, systolic blood-pressure to 150 and dizziness had returned. The same treatment, namely, low diet and in-

intestinal irrigations relieved these symptoms and reduced the blood-pressure to 126.

Result.—Weight reduced from 201 to 171, systolic blood-pressure from 150 to 126. After overeating blood-pressure returned to 150 but was promptly reduced again to 126.

Case X.—Mrs. J. S. This patient was treated for some years by the use of lutein injections, drugs to reduce blood-pressure and other measures known to the writer at the time, and relieved to a very considerable degree. She had symptoms of menopause and a very severe form of headache. Tho she was not much overweight it was decided in 1921 to place her upon a weight reduction diet in order to determine if still further improvement could be obtained. Previous to that time her blood-pressure had been reduced from diastolic 122, systolic 198, to diastolic 114, systolic 164. The weight was 143 pounds, 12 ounces. These readings were taken May 12, 1921. By August 1, the weight was reduced to 138 pounds and five ounces; the blood-pressure to diastolic 110, systolic 154. The patient felt considerably better and ceased coming to the office. It was stated in the previous article, "I am convinced that the diet would have reduced the diastolic pressure ten or twenty points more." On July 10, 1922, she returned for further treatment. The weight reduction diet was then taken up where it had been left off. She weighed on July 10, 142 pounds. Her blood-pressure was diastolic 114, systolic 172. On August 14, her weight was 138, her blood-pressure diastolic 100, and systolic 142. She said that she felt the best in years, not having a pain or ache or other symptom. It is fair to state that she received lutein or whole ovary injections, as in the past and, for one week, novatophan tablets. The chief complaints of this patient were hot flashes and nervous symptoms of the menopause but, above all, one of the most persistent forms of headache. She described it as so severe that the pressure of the softest pillow against her head was painful.

Some recent cases contain points of interest even greater than those previously reported.

Case I.—Mr. P. D. H., first visit December 22, 1921, age 53, weight 218 pounds, 12 ounces, blood-pressure diastolic 90, systolic 210; chief complaints dyspnea on exertion, difficulty in climbing steps or going up hill, headache back of the eyes and over the occiput and especially on the top of the head, very severe when coughing (the patient had a very bad cough at the time). He was at once placed upon a weight-reduction diet of a very restricted nature and seen daily. In 28 days his weight had dropped 18 pounds, 12 ounces—to 202—which was at the rate of more than a half a pound a day. His blood-pressure dropped to diastolic 84, systolic 160. On January 5, several teeth were extracted because of abscesses. Before this was done the systolic blood-pressure had dropped 30 points and the subsequent drop was 24 points additional. All of this patient's symptoms were remarkably improved. At each

visit he commented upon how much better he felt, finishing the treatment with practically no complaints whatever.

One striking feature of this case was the comparatively low diastolic blood-pressure throughout. It is frequently stated in the literature that the diastolic is of more importance than the systolic. Here was a man with a diastolic between 90 and 100 and a systolic between 200 and 210 and yet, with an inconsequential lowering of the diastolic and a considerable lowering of the systolic during the process of weight reduction, his symptoms were relieved. There was no complaint of weakness on the part of the patient. The disappearance of dyspnea, drowsiness, headache and toxemia gave him a feeling of well-being and increased his ability to do things to such an extent that, in the place of weakness which some might expect to attend such rapid reduction of weight, there was an increase of both physical and mental power.

Result.—In 28 days patient's weight was reduced 16 pounds, 12 ounces from 218 pounds, 12 ounces to 202 pounds, his systolic blood-pressure from 210 to 160, his dyspnea, headache and drowsiness relieved.

Case II.—Mr. H. H. B., first visit May 9, 1922, age 70, weight 188 pounds and 12 ounces, pulse 68, blood-pressure diastolic 80, systolic 206. For two years previously patient had been examined at the Life Extension Society. In 1920 weight was 180 pounds, diastolic blood-pressure 125, systolic blood-pressure 225. In 1921 weight was 182 pounds, eight ounces, blood-pressure diastolic 100, systolic 224. Patient was advised to limit the amount of meat, also to reduce weight. He limited the amount of meat but did not reduce his weight, having gained 8 pounds, 12 ounces in two years. His diastolic blood-pressure had shown a remarkable decrease before he was seen by me, that is, 45 points. Notwithstanding this change he complained of dyspnea on exertion, retrosternal discomfort verging on the painful and extending down the left arm to the wrist—in other words, mild angina pectoris. The writer placed him upon a diet which reduced his weight and succeeded thereby in doing away with his symptoms of angina and almost eliminating the shortness of breath, so that he could climb stairs with little difficulty, lowering his systolic blood-pressure in one month's time as much as it had been lowered in the previous twelve months thru a reduction of meat. The difference was that, while abstaining from meat, he had eaten of starches and fats sufficiently to increase his weight before he came under treatment by the writer. Afterwards the starches and fats were limited and his weight dropped 10 points, his systolic blood-pressure dropped 26 points.

Result.—In two months' time patient's weight was reduced 10 pounds, blood-pressure diastolic 6 points, systolic 26 points, notwithstanding the fact that patient had been dieting the previous two years, and had already obtained a drop in blood-pressure of diastolic 45 points and systolic 20 points. The patient's symptoms were relieved by the weight-reduction diet upon

which he was placed by the writer, tho not by the previous diet from which meat was eliminated while sufficient fats and starches were ingested to cause a slight increase in weight.

Case III.—Mrs. H. A. G., first visit May 27, 1922, age 70, weight 159, blood-pressure diastolic 115, systolic 220, pulse absolutely irregular and rapid. Symptoms: inability to sleep in a recumbent position, inability to walk even a block because of shortness of breath. Patient had been under treatment for some time and, among other things, had reduced the amount of meat in her diet. So far as the writer was able to ascertain, no limitation was placed upon sweets, pastries, starches or rich foods of any kind. The abdomen was distended with gas, the urine was negative to albumen and sugar, tho it contained indican three plus. Patient was immediately placed upon a diet from which all sweets, pastries and rich desserts were excluded, on account of the large amount of gas and abdominal distension, and care was taken that the diet should be a weight-reduction diet. Sufficient catharsis was given to aid elimination and to hasten disappearance of the distension. The following remarkable recovery ensued:

There was a loss of four pounds in weight the first week, of three and a half the second. According to the patient's statement, she began to feel much better, returned from Atlantic City to see the writer on the sixth of June, reported that she could walk about four blocks and could sleep well in a reclining position at night. Her blood-pressure was diastolic 115 and systolic 210. Her weight was not taken because she was seen in an apartment where no scale was available. From June 23 she visited the office. On that date her weight was 147 (a loss of 12 pounds), diastolic blood-pressure 110, systolic 190. The writer prescribed a certain amount of calisthenic exercise of a very easy kind in addition to her diet which, tho restricted, was not so strenuous as during the first few weeks.

There was a steady, continued improvement. On July 5, the weight was 145 pounds and 12 ounces; blood-pressure diastolic 106, systolic 180. Patient reported that she felt much better, walked as much as she wanted to without dyspnea (if hills were avoided)—in fact, had walked 20 blocks that day. On August 16, weight was 140 pounds, 12 ounces, blood-pressure diastolic 94, systolic 164, climbed a rather steep hill without difficulty, pulse regular, not a single intermittency during two minutes of examination. Previously the pulse had been improving in character but an occasional skip was noticed.

Result.—Patient age 70, in less than three months was relieved of a heart condition accompanied by a very irregular pulse, dyspnea on exertion, orthopnea. By reducing the weight 19 pounds the blood-pressure dropped diastolic 20 points, systolic 56 points. During this time, tho the patient had lost practically 20 pounds, there was no attendant weakness, but a steady increase in strength, ability to walk, climb stairs, to resume more or less her

household duties, and there was the appearance of unusually good health for one of her age.

It may be said that if a patient does not improve in other respects as the blood-pressure is reduced, the method is not suitable for that particular case. Those for whom this method is especially indicated are patients who have been given to overeating, whose trouble is of recent origin, who have a full pulse, who suffer from headaches, dyspnea, cardiac failure due to high blood-pressure, cerebral hemorrhage.

It is contraindicated especially in those in whom arteriosclerosis has advanced sufficiently to make lowering of the pressure favor cerebral thrombosis or gangrene of the toes.

The following methods among others have been recommended for lowering the blood-pressure but will not be discussed in this article:

Low protein diet (particularly meat).

Salt-free diet.

Limitation of fluids.

Drinking large amounts of water.

Drinking only distilled water.

The question arises, why does a reduction of weight cause a lowering of blood-pressure? These are some of the possible explanations:

- a. The diet is low in total caloric value, therefore depleting.
- b. Its low carbohydrate content decreases toxins, changing the intestinal flora from one in which fermentation plays an important part.
- c. Intra-abdominal tension is lowered either by loss of fat or diminished tympanites.
- d. The writer is inclined to favor the toxin theory.

It is known that the clearing of focal infections will often relieve high blood-pressure. Increased toxemia may explain this. A low protein diet often gives good results and may be explained in the same way. As to carbohydrates it is known that the average person eats heavily of concentrated starches and consumes about 80 pounds of sugar annually, which is many times higher than is desirable. Any dietary excess is apt to produce a toxemia.

The low protein diet has been the plan most frequently followed in the past. It may be that many of the patients dieted in this way lost weight and weight reduction was responsible for lowered blood-pressure. Two of the cases already cited had used this diet without much benefit but, when placed upon a diet low in carbohydrates, improved rapidly.

Mr. H. H. B. had dieted for two years with a restriction of protein while his weight had increased eight pounds. It must be admitted that there was a decrease in blood-pressure but it was insufficient to do away with his symptoms. When placed upon a diet low in carbohydrates and fats, the drop in systolic blood-pressure in two months' time was equivalent to what was obtained in two years when proteins alone were limited, and the symptoms were almost entirely cured, altho the previous method had not effected them at all.

Mrs. H. A. G. is a similar case in that she had previously been dieted by the limitation of the proteins with no attention paid to carbo-

hydrates. The very prompt and marked drop in blood-pressure and almost complete relief of all the symptoms followed a limitation of carbohydrates and fats in the diet.

Conclusions.—Further experience with weight reduction and its effect on high blood-pressure leads the writer to the following conclusions:

- I. High blood-pressure frequently drops quickly and steadily during weight reduction and maintains a lowered reading as long thereafter as a normal diet is followed.
 - II. Many symptoms attendant upon high blood-pressure are relieved at the same time. Among these may be mentioned palpitation, dyspnea, angina pectoris and certain severe forms of headache.
 - III. When the heart is embarrassed and the pulse irregular, with or without edema of the lower extremities, if the blood-pressure is very high this method of treatment may relieve the whole group of symptoms by lowering the pressure and enabling the heart to regain its competency.
 - IV. These results may reasonably be explained by the lessening of a toxemia due to carbohydrate fermentation and the creation of an intestinal flora more favorable to health.
-

A Laugh.

A laugh is just like sunshine,
It freshens all the day,
It tips the peaks of life with light
And drives the clouds away;
The soul grows glad that hears it,
And feels its courage strong—
A laugh is just like sunshine,
For cheering folks along!

A laugh is just like music,
It lingers in the heart,
And where its melody is heard,
The ills of life depart;
And happy thoughts come crowding,
Its joyful notes to greet—
A laugh is just like music,
For making living sweet!
—Texas State Med. Jour.

A VOYAGE TO SOUTHERN LANDS.

BY

E. S. GOODHUE, M. D.,
Pukoo-Molokai, Hawaii.

After a three days' voyage from New Orleans on a very steady, comfortable boat, "The Comayagua", we came into the ancient tropical port of Cortez, Honduras, early in November. The town which numbers about 3,000, is constituted by a double row of houses placed in a half circle along the bay. Most of the dwellings, some of them of two stories and very well built, stand on piles in two or three feet of water. Between the double file runs a noisy tramway, carrying bananas and, at hour intervals, such passengers as may wish to go from the wharf to the other end of the town—a distance of about two miles.

The swamps surrounding are one dense jungle of palms, palmettos, ferns, and hundreds of varieties of hard wood—trees and shrubs, many of them bearing exquisite flowers. In the lovely lagoon, two miles in circumference, with a narrow outlet into the bay, are fish, turtles, alligators; in the bordering forests, parrots, macaws, monkeys, jaguars, pumas, tapir, boa-constrictors and other animals and reptiles common to Central America. Up and down the paths on each side of the central track, back and forth all day, walk the citizens of the town—whites, Jamaica negroes, men from Trinidad, Spanish, many-hued Honduraneans, some Chinese, a few Turks and Syrians, Indians with baskets of fruit or cakes on their heads, bright-eyed señoritas and señoritas with a careless mantilla thrown over their heads or shoulders.

Dr. O. B. Hunter, formerly of Texas, has lived here for 30 years. He owns a

drug store, and still practices among the people.

The Cuyamel Fruit Company has a small hospital for their employees, Dr. Stowe, an American, in charge, assisted by Dr. Cardanelli, and a New Orleans nurse lately arrived. I am informed that there is a great deal of malaria (the *anophles* mosquito being prevalent) and more or less blackwater fever. As with other primitive races, the natives do not come to the physician except *in extremis*. Dysentery is rather common, and the skin diseases, particularly eczema, dermatitis (from bites, scratching and other irritations) and leucoderma, are exhibited frequently. The doctors do not regard leprosy as a disease of the country not having seen any cases during their residence here. Dr. Hollman of La Ceiba, believes that the *culex* is responsible for the cases of elephantiasis he has seen. Pneumonia is rather infrequent, but, as a result of epidemic influenza, was very fatal, with a 90 per cent. mortality.

I may say that the hotels are screened, and the houses of the better conditioned, but Americans and other foreign residents, I find, take preventive measures against malaria by frequent doses of calomel and rather large doses of quinine—in some cases, 45 grains three times daily.

Owing to lack of means to get away, we stayed in Puerto Cortez for 80 days, but finally caught a Dutch boat going to Puerto Barrios, Guatemala, which we reached in six hours. Altho we paid heavy cabin fares we had to sleep on deck unsheltered from the rain.

Puerto Barrios, named for the former president of that name, is a banana port, the United Fruit Company having here a hotel, offices and an extensive wharf said to have cost half a million dollars gold.

The Guatemalan Central Railway's northern terminal, also, is here, the line extending to San Jose on the Pacific side, thru the city of Guatemala.

We stopped over one day at Quirigua to see the famous Mayan ruins there, and were well repaid. They are so well described in detail in numerous books and magazines by men better qualified to speculate about them than I am, that I shall not attempt to say anything new. The dense tropical forest thru which we went to inspect the temple (or ancient city site) was almost as interesting as the ruins themselves—and we returned to our hotel without complaint over the slight wetting we had received. There is a large hospital at Quirigua, costing about half a million to build and equip, with a staff of three physicians and several nurses. Dr. McPhail, the superintendent, is an up-to-date physician much loved by all. Dr. Carr is the surgeon, and Dr. Walker assistant.

Owing to a stringent Guatemalan law or regulation, candidates for a license to practice medicine in the Republic must pass a rigid examination in Spanish. As one doctor expressed it to me: "You must have a 'concession', otherwise the catch questions in the test will get you." This law does not apply to Honduras where an American with a diploma from a recognized college may, after it is "authenticated" by a Honduras Consul in the United States, have it registered at the capital. I am told by some that the Quirigua Hospital is one of the best in Central America. Dr. McPhail practices under license, but Drs. Carr and Walker do their work under Dr. McPhail's superintendence.

Nov. 22.—Here in the ancient city of Guatemala founded by Alvarado, destroyed in 1773, and again in 1917 by earthquakes,

I find a number of hospitals, Military, General and Charity. The large Maternity Hospital was demolished in 1917, and has not been rebuilt. I met a very pleasing gentleman, Dr. Azurdia, once a famous surgeon of the city, but recently the Minister from Guatemala to Liverpool and Scotland. He speaks good English and French and we had an interesting talk about general matters and our common friends—Drs. Osler and Adami. Dr. Azurdia tells me that while a few cases of leprosy have been segregated in a hospital near Guatemala city, lepers are seldom seen in general practice. A large number of American dentists, and Guatemalan dentists with American diplomas, are in practice here—among them Drs. Meza and Maruzupia whom we met. Dr. Meza is the brother-in-law of a former president of Salvador whose brother is the present president. Altho practicing, he is the heir to considerable estates and believes that every man should work for his living.

Dr. Tenny, American, tells me that he has seen several cases of elephantiasis since he came here, that the usual site of infection is the scalp, the infection being followed by a partial blindness which may become permanent if not treated, after which develop the classical symptoms and hypertrophies. Typhoid fever is rather rare in the outside districts, altho there are sporadic cases from time to time. Influenza as an epidemic has occurred, but measles, chickenpox, smallpox, whooping cough, etc., are not frequent and seem to be milder than in the north. This, also, is true of Hawaii.

At a reception given in our honor by Mrs. Barrios, a granddaughter of a former president, Señor Rufino Barrios, and his niece Señorita Concha Barrios, we met most of the prominent people of the city—among them a German scientist connected with

the Rockefeller Institute, Dr. Berg, an intelligent young Russian physician in practice, the honorable Señor Dr. J. Azuardia. Dr. Berg says that typhoid fever generally develops after copious rains, as the water supply is not good. The doctor has seen elephantiasis but no cases of leprosy. He thinks that all of Central America is a "rich clinic" for diseases of the skin, and tropical diseases, as well as tropical phases of diseases common to the north. I emphasize this point because I have found in Hawaii that such phases or modifications of textbook disease, need special study. There might even be an account of tropical surgery—a modified technic to meet special conditions. Dr. Berg thinks that hookworm disease, except in children, has been too generally regarded by investigators as the cause of various tropical dyscrasias.

It is the intention of the Government under the direction of Dr. Tenny, resident here, to build at Lake Amatitlan (a beautiful body of water near the city, at an elevation of over 3,000 feet), a commodious sanatorium modernly equipped. Also, a hospital, a hotel for convalescents and others, and a school of Tropical medicine—the latter to have a staff of physicians engaged in research and clinical work. The location for these buildings has already been secured. I was privileged to see the beautiful lake and run along its shores for miles.

Nov. 24.—We are leaving for San Salvador where, I understand, there are some modernly equipped hospitals. We have traveled by boat, overland, by rail, thru Honduras, Guatemala, Salvador and may touch Nicaragua. Our trip across Honduras on the way back will take us about 80 miles by automobile to the capital—Tegucigalpa—then on by auto and boat across Lake Yojoa,

by mule-back, and then by rail to place of beginning.

If we come out safe, I hope to send you another letter.

Guatemala City, Republic of Guatemala,

Nov. 25, 1921.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

III.

At the crossroads nearest the village of Banigarh, the driver swerved his bullocks to

"Does this treatment work?" queried the doctor.

"Oh yes, Sahib, it works. But it has been a custom for so long now that no one would touch the flowers but a stranger, or a child."

The village of Banigarh consisted of some fifty hovels of mud and straw, set back from the cartroad. A crooked footpath straggled between the huts and across a field to the well.

Near the road a group of sick children, with a few men and women, were huddled together on the ground. As they recognized the hospital bullock cart, some of them got to their feet and came forward, asking for medicine.



(Courtesy of Presbyterian Board.)
Outdoor Dispensary.

the right. In reply to Dr. Jordan's question he said, "There is sickness, Sahib. I do not wish to carry it with me." He pointed to some wilted flowers lying on a little mound of earth, in the exact center of the crossroads.

"It is the custom, Sahib," he went on. "Perhaps the sickness is smallpox. In that case they take a few scales from the sores on the patient's body, lay them on this little pile of dust, and decorate them with flowers. Whoever picks up the flowers will carry away the disease with him, and the patient will recover."

"What are you sick people doing out here?" asked Dr. Jordan.

"We are waiting to go to the temple, hazur. We have the smallpox. See? It is now the tenth day. We go to worship Sitala."

With the help of the driver and the orderly, Dr. Jordan quickly set up his dispensary. It was a sorry string of patients that surrounded him. Among all the villagers, only a few had some minor ailments. Chiefly it was smallpox. Yet there was no idea of segregation. The woman who had scalded her hand sat awaiting her

turn among those who were covered with sores.

To those who were not yet stricken, Dr. Jordan suggested vaccination.

"No, *hazur*, it is not our custom," was the unfailing response. Some added that it would do no good, as nothing would help them to dodge Sitala if she chose to visit them.

At length an old man, squinting from one eye, volunteered the information that the *hakim* had told them all about vaccination. "You foreign doctor people cause sickness to fall upon a sacred calf, for the sake of making the medicine. No, Sahib, your other medicine is good, but not that."

Squatting apart from the others, Ram

Shanti was next. I took her yesterday. Durga I will take tomorrow. The baby died last night."

"Do they suffer from fever?"

"Yes, *hazur*, they burn up. To relieve it, their mother offers cold water and cold rice at Sitala's shrine."

"Have you used any medicine?"

"No, *hazur*, but I have made vows to Sitala. If they recover, I shall have to pay five rupees for each boy and four annas for Shanti."

"Why so little for the girl?"

"Sitala does not want her so much as she does the boys. Her neck is too small. I am having difficulty to arrange a marriage for her. Already she is eight years old."



(Courtesy of Presbyterian Board.)

Ram Singh and Children Afflicted with Blindness Due to Neglected Smallpox.

Singh watched for the crowd to grow less. He was not ill, but he had brought his three children, and he wanted to present them at a time when the Doctor Sahib would have abundant leisure. The girl wore heavy anklets and a dark garment, once red and green, but the two boys were quite naked. Durga sat on his father's knee, while Moona crouched at his side.

Dr. Jordan received a detailed description of their cases. "Moona has had it longest, *hazur*. I took him to the temple some time ago for the tenth day ceremony.

The medicine which Dr. Jordan doled out they swallowed avidly. The orderly prepared three bottles, and Dr. Jordan tied a colored cord on each to insure equal distribution. "Red for Durga, blue for Moona, and brown for Shanti," he emphasized, as he handed them out.

Ram Singh took the blue and the red, while Shanti carried her own.

"Are these all of your children?" asked Dr. Jordan.

"No, *hazur*, there is an older boy at home. But he is safe. Sitala took our

first-born, so we named this one Kurria,¹ and she has never noticed him."

"You had better let me vaccinate him."

"Oh no, *hazur*. I do not wish to draw Sitala's attention to him. We keep him back in a dark corner. Sitala will not see him."

The effort to explain contagion and the value of vaccination was fruitless.

"No, *hazur*, he is quite safe. I will use your medicine for these."

* * * * *

It was a full year before Dr. Jordan's bullocks brought him again to Banigarh. In front of their huts a half dozen men and women squatted in the sunshine, smoking their *hookahs*. There were fewer children about than formerly. A little girl, coming from the well with a large brass vessel of water on her head, salaamed gravely.

"You gave me medicine last year, *hazur*. See? I am all well. I will call my father." As she reached her hut, a blind boy lying on the ground rose at her hurried command.

Soon emerged Ram Singh, leading his three sons, whom he lined up before the doctor with low bows and salaams.

"*Hazur*, your medicine last year cured their sickness. Now kindly make them to see."

The little chaps stood eagerly listening for the voice of the Doctor Sahib.

"How long have they been so?"

"Some months, *hazur*. You see Kurria did not escape. After Sitala had visited every other child in the village, she searched him out."

"Was he very ill?"

"Not so bad as the others, *hazur*. I used all the medicine that was left, and his mother made offerings every day. But his eyes were more sore."

"Did all of them have sore eyes?"

"Yes, *hazur*, very sore indeed. The flies were never off their faces. Trying to drive them away, they would rub their eyes, and get in much dirt."

"Were not Shanti's eyes sore?"

"Yes, *hazur*, but she rubbed them with water, quite without authority."

"Did you not use water for the boys?"

"No, *hazur*, the *hakim* prepared for them an ointment of marvelous power. For it I paid him six rupees."

"Do you know how he prepared it?"

"Oh yes, *hazur*. He compounded it here before us all. It is a most potent remedy. For it he required from the boys' mother two of her most treasured glass bracelets. One was red, the other green. According to an ancient and honored formula he ground them to powder. With the powder he blended *manasha* juice. This ointment we applied to their eyes every day until it was gone. It cured the soreness. But they do not see."

A careful examination showed the three pair of eyes to be in the same condition of total blindness. Curbing his indignation, Dr. Jordan gently explained the action of ground glass on the sensitive eyeball.

As he realized the truth, Ram Singh's eyes flooded with tears. "Oh, Sahib, if you had only been here! Sitala has left her mark!"

THYRO-GLOSSAL CYST—CASE REPORT.¹

BY

CHARLES N. GELBER, M. D.,

New York City.

History.—Mrs. D. J., age 26, housewife, married, two children alive and well. Patient well up to four years ago, when she began to complain of difficulty in breathing and swallowing. Six months later, the patient had a severe hemorrhage from the mouth and was taken to Bellevue Hospital, where a diagnosis of pulmonary tuberculosis was made. The patient was first examined by me on October 13, 1921, when she gave a history of a second hemorrhage from the mouth, three weeks previous to this examination.

Physical Examination.—Oral and laryngoscopic examinations revealed a large, smooth, sharply circumscribed mass, about three inches in each diameter, originating from the base of the tongue and extending downward towards the epiglottis, filling the entire oral cavity. The mass appeared richly vascular and encapsulated, suspended by a broad pedicle. The patient experienced difficulty in breathing and swallowing. A large calibre aspirating needle was inserted into the center and sides of the

¹ He of the dung-hill.

Pronunciation and values:

Banigarh—Bunny gur'. Sitala—Seet' alah. Durga—Doorga. Shanti—Shon' ty. One rupee—\$.33. One anna—\$.02.

¹ Read and case presented to the New York Physicians' Association, March 29, 1922.

mass, and in spite of the cystic consistency of the new growth, no fluid was obtained. However, on withdrawing the needle, bloody fluid exuded from the punctures. On October 26, 1921, a laryngoscopic examination was attempted at Dr. Kopetzky's Clinic at the Beth Israel Hospital, but the laryngoscope could not be passed beyond the pedicle because of the size of the mass.

Radiologic Examination.—A radiologic examination of the neck revealed no evidence of connection of the mass with the hyoid bone.

Laboratory Findings.—Blood Wassermann, urine and sputum—negative.

Conclusions.—The mass has remained the same size for the last five months, the patient being under constant observation. It is interesting to note that in spite of the two pregnancies, which usually cause a thyroid hyperfunction, in this case there is a distinct absence of any evidence of thyroid enlargement. In fact, there is a concavity in the neck simulating an absence of the middle lobe of the thyroid. Therefore, it is fairly certain that the diagnosis of a thyro-glossal cyst in this patient, is the only logical one that can be made. Gilman, in the *Journal of Surgery, Gynecology and Obstetrics*, 1921, relates the following: "Thyro-glossal cysts are present in the mid-line of the neck or tongue along the site of the original tract differing from the lesions of the bronchial clefts, which are lateral in their situation. The time of appearance further distinguishes between these lesions, the thyro-glossal cysts never being congenital as is the case of the latter. They may appear at any time after birth from the earliest months to adult life, when in response to unknown factors the cystic dilatation first manifests itself."

"The size to which thyro-glossal cysts develop varies greatly and depends, in part, upon their location, the course taken in their development, and the absence of infection. In addition to the frankly cystic or clearly patent portion of the duct, a less obvious fibrous extension usually exists. This is a minute thread-like portion of the tract attached to one pole of the cyst."

"Removal of the cyst, or the resulting sinus and the tissues along the site of the original duct, including the mid-portion of the hyoid bone, is the only procedure that will surely lead to a complete cure of the condition. As many as eight operations on a single case by surgeons of experience have been reported before a cure resulted."

As to the mode of procedure, operative interference seems to be the method of choice. At the Mayos', eight cases were reported in which the hyoid bone was split open, the operator approaching the base of the tongue, employing a like technic as for cancer of the tongue. As to injecting the mass with hot water or chemicals, it would seem impractical, because of its location and it is doubted whether X-ray therapy or radium would be of any use.

231 East 13th Street.

WHITHER ARE WE DRIFTING AS A PROFESSION? SOME FACTS WORTHY OF OUR CONSIDERATION.¹

BY

B. C. KEISTER, A. M., M. D.,

Americus, Ga.

A distinguished statesman once remarked: "Two things grow better with age, 'Wine and Judges'." Can we not apply this analogy to the great Science of Medicine? Are we as a profession, keeping up the high standard set by our forefathers, and making the necessary progress to meet the demands of the Twentieth Century requirements? Or are we drifting into the by-ways, specialties, commercial short-stops, the get-rich-quick advertising schemes, thus compromising our professional calling with the trades-unions, industrial insurance companies, the pseudo-sciences, such as the Homeopathic, Eclectic, Chiropractic, Osteopathic, Christian Science or mind healers, etc., etc.?

It is a well-known fact that these so-called sciences are rapidly filling our country and spreading their doctrines into every community, sowing seed of superstition and ignorance, causing discord and discontentment among all classes with whom they come in contact. Strange as it may seem, some of our State Medical Examining Boards are being made victims to some of these pseudo-sciences, and are tolerating them in the regular formal examinations of candidates who belong to the regular medical profession. When we consider this state of affairs in our profession, it is *high time* that the regular medical profession

¹ Delivered before the Third District Medical Association of Georgia at its twenty-ninth Semi-annual Session, held at Cordele, Ga., November 22, 1922.

should call a halt on these State Examining Boards, requiring them to either *get-out-and-down*, or turn the whole business over to these pseudo-science associates and their *political backers*. If I understand the meaning of the code of Medical Ethics, as adopted by the American Medical Association, these medical examiners who tolerate these pseudo-examiners on their mixed board, are deliberately and flagrantly violating the *real essence and outstanding principles* of the code of Professional Ethics, and should be held accountable and debarred from consultation with the regular profession.

I am acquainted with a certain Examining Board in one of our Southern States, which is made up of three eclectics, two homeopaths and five regular physicians. One of the homeopaths is vice-president of this Board, while the other one is not a graduate of even a Hahnemann college. The three eclectics have no medical degree from any school, yet they are medical examiners with the five regulars on this *august* mixed Board.

In view of the antagonistic sentiments that have existed for the past half century between the homeopaths and the regular medical profession, is it not reasonable to suppose that when one of our regular M. D.'s is confronted by one of the Hahnemann examiners, injustice in grades will be the result in the majority of cases? This same rule will doubtless apply to the eclectics, knowing the fact that they are ignored by the regular medical profession for the same reason that we ignore the homeopathic doctrine. This same board designates the regular medical profession as allopathy, which is a misnomer, and has rightly become an obsolete term, since the progressive science of medicine has out-

grown that doctrine and name over a century ago, and the name is not used by educated people except for deception and derogatory purposes.

Strange as it may seem, we have a spirit of commercialism in the regular medical profession of the Twentieth Century, that is displayed along many angles, but this unfortunate spirit does not exhibit itself quite so bombastically as these previously mentioned pseudo-sciences. We have a few educated M. D.'s, who for the sake of the monetary feature, coupled with other conditions best known to themselves, have in a measure, abandoned the regular profession and aligned themselves with a number of the pseudo-science followers, but retain their degree of M. D., thus giving them more prestige in their communities as well as enabling them to pass the various examining boards, having been previously taught and drilled in the real merits and essentials of medicine and surgery, while taking their regular medical course in a medical college.

This drifting tendency on the part of the medical profession is beginning to assume noticeable proportions, and should be taken up and carefully considered by our educators in their respective conferences on Medical Education, under the auspices of the American Medical Association.

There seems to be a state of discontentment not only in the medical profession, but this sad state of uncertainty exists in all of the professions. This state of discontentment seems to be one of the many unfortunate sequels of the World War, and is observed more distinctly in the medical profession than any of the other learned professions. Why should this be true in this enlightened age of the Twentieth Century? In answering this preponderous question,

in the writer's judgment, some of the indirect causes have been intimated in the foregoing comments on mixed examining boards and the various pseudo-sciences that have taken on new life since the World War and are asserting their bombastic propagandism before the uneducated credulous populace. Then too, while all of this seeming conspiracy to undermine our regular medical profession is going on, the populace are taking notice of the culpability of *our profession* in sitting idly by and taking no steps to correct this state of things, knowing too, that as conservators of the health of the nation, we should at least show some interest in the education and better enlightenment of the public.

In view of the fact that 33,000 trained, educated physicians and surgeons volunteered their services toward winning the great war, and shared the hardships of the regular doughboy, we have a just right in shaping the sentiment and informing the world from an advisory point of view in matters pertaining to the health and general welfare of the nation. We should also exercise our right in protecting our communities from the so-called pseudo-science fakers, advising our municipal officials, our representatives in our State Legislatures and our Congressmen, from an *educational* and *scientific* point of view, offering them such data as will convince them without prejudice. Shall we as a profession and conservators of the public health, continue our indifference toward these pseudo-sciences and allow suffering humanity to be made victims of their sophistical arguments and manipulative adjustments? Shall we continue to sit idly by and thus become *particeps criminis* for the damage done to their credulous victims, besides the disgrace wrought upon our Twentieth Century

civilization? Shall we continue to cast our votes for men to represent our country in legislative halls, who are too ignorant from a health standpoint, or too politic from a pecuniary and selfish point of view to do their duty toward shielding their constituents from becoming a prey to this class of so-called healers? Recall if you please, the results of some of our State Legislature sessions, when a separate board of examiners was inaugurated for this special class of pseudo-healers, exempting them from examination on the most vital subjects pertaining to health. Is it not a disgrace for any state to place such a *blot* upon her legislative record?

As intimated in the outset of this paper, are we holding up the standard of our great science in meeting the demands of the Twentieth Century requirements? We are confronted by many new and strange diseases as a sequel of the World War and the intermingling of the foreign nations of European countries, such as typhus fever, impetigo, etc., etc. Then we have other diseases that have taken on serious complications caused by our modern modes of travel, such as air and seaplane, automobile, etc., causing the various forms of neuroses. It is claimed by reliable authorities that organic heart disease has increased 40 per cent. within the past 10 years due, in part, to the automobile and airplane.

In view of these facts, the demands for skilful medical men who can diagnose and treat these new diseases, is growing with each decade. We also have a class of malingerers, who are seeking war pensions for supposed injuries received during the great war; many of these did not cross the water nor smell powder or gas, yet they claim a pension for "shell-shock" and diseases contracted before and after the war.

Some of these malingerers are of foreign birth and should be court-martialed for disloyalty to their country.

I know whereof I speak, having recently been called upon to examine a large number of ex-soldiers by the Clean-up Squad of the Red Cross officials, and it always afforded me pleasure to lend my skill and assistance to a worthy doughboy. In some of the claimants, it required both skill and tact to be able to separate the *wheat from the chaff*. Some of the malingerers seemed to be victims of "pension neurosis," yet claimed to be shell-shocked, which, in my judgment, is nothing more nor less than a modified form of hysteria, or "war-fright."

In view of all of these facts, considered from their varied angles, are we as a profession and guardians of the health of our great nation, justifiable in keeping silent on the subject of "Inefficiency" from a health viewpoint? Are we not culpable in a measure, for the damage wrought to our people, our over-credulous friends, by these so-called pseudo-science healers, under the varied names above mentioned? If any of these pseudo-science healers possessed any merit whatever, no doubt they would have been enrolled as healers or helpers in the great war! But alas! they were *not needed* to help win the great victory!

We are all familiar with the founder of osteopathy, Dr. (?) A. T. Still, of Kirksville, Mo., where the parent school of this pseudo-science was planted in the year 1894. On careful examination and investigation by a committee, appointed by the Governor of Kentucky, for the purpose of ascertaining the true character of this and other like schools prior to allowing their graduates permission to practice in that

State, it was ascertained that not one of them was equipped for teaching the first principles of a medical education. The Kirksville school, known as the American School of Osteopathy, is owned and controlled by the A. T. Still family, and is strictly a money-making scheme for the Still family. It is the parent of half a dozen other schools of less repute, located in various parts of the United States, sending out every year hundreds of their D. O.'s to practice their so-called "manipulation" science on frail, weak humanity.

We may add that the so-called pseudoscience of chiropractic is based on about the same dogmatic principles as that of osteopathy, differing only in phraseology and the use of certain terms by which the D. O.'s distinguish themselves from their allied competitors, the D. C.'s, the former basing their theory on certain forms of *manipulation*, while the latter use the term "adjustment." The founder of chiropractic is one B. J. Palmer, and the parent school is located at Danavenport, Iowa. This school is regarded as the great Mother school of half a dozen or more located in various sections of the United States, and like the osteopathic schools, are sending forth their graduates in all parts of the world, sowing seed of ignorance, superstition and fanaticism, and reaping as easy prey the credulous weaklings, the maimed and halt, the deaf and dumb—in fact, all comers regardless of age, race or conditions. And since the World War, and President Harding's *unintended* discourteous "snub" to the regular medical profession, it seems that these pseudo-sciences have taken on new life, and are swarming the whole country, especially the Southland where the climatic conditions seem more favorable to their *zealous propaganda*.

I am reliably informed that the Legislature of New Jersey, at its last session passed an act requiring all drugless healers and other pseudo-sciences and cults to pass the regular examinations before the State Medical Examining Board. Following this legislative action, these drugless healers sought other fields, large numbers of whom have invaded the South. As many as a dozen or more have located in the State of Georgia during the past year. British Columbia contemplates solving this problem in the same way as the State of New Jersey, but adds a further restriction requiring all applicants to be graduates of a first-class medical college in addition to their own special course. This, in the writer's judgment, seems to be the only solution to this great American fraud, and should be inaugurated in every state in the Union, even at the sacrifice of money and time on the part of every true legalized physician in the United States. The Federal Government expects the regular medical profession to continue to be the guardians of the public health, and as such, will stand at the back of the profession, provided we will take the initiative movement in the fight as did the Medical Council of British Columbia. Let's make the Empire State of the South start the ball rolling, by taking a little more interest in our State politics, electing competent representatives to our State Legislature. Let us put more medical men in our State Legislature—men whom we know to be of the right kind of material, and who feel the importance of protecting our civilization as well as the dignity of the regular medical profession, from the disgrace and humiliating influence on our present and future generations. When we consider the bold fact of these cults and pseudo-sciences, keeping the lob-

bies of our Legislature constantly filled with their paid advocates, and that they keep on hand a large fund for no other purpose than that of remunerating our legislators who may be interested in their schemes either financially or otherwise—in view of this state of affairs, should we not send a delegation of our best men to see that no legislation be permitted that will be favorable to new acts that might be inaugurated each session of the State Legislature for this *fact?*

It is a known fact, that these drugless healers, cults, patent nostrum venders, etc., etc., have at their command a large fund set apart for the sole purpose of fighting all legislation that oppose them. They have their "pickets" located not only in Washington, D. C., but in and about every state Capitol in the United States. Then too, they have a bunch of the shrewdest lawyers at their command located in every state in the Union. To meet all these costs, the schools from which they received certificates of graduation, assess each of their graduates who bears the title of D. O. or D. C. a certain amount toward the up-keep of their enormous fund. We can readily see what a monstrous task it will be to undertake to eliminate them from our country.

It is interesting to note the diversity of the various schools of healing human ailments without the use of medicine and surgery appearing, however, only for a short season and disappearing into oblivion like the morning mist on the approach of the noon-day sun. We have the metaphysical healers, Divine healers, prayer healers, magicians, theosophy, telepathy, new-thought, auto-suggestion, hypnotism, etc., etc., all claiming to possess miraculous gifts

or the secret of occult science, a kind of mythical knowledge.

"Deep truths to others unrevealed,
Mysteries from mankind concealed."

In many instances these professors and followers are enthusiastic, self-deceived visionaries, while in a great majority of cases they are downright frauds, practicing upon the credulity and ignorance of their patients for revenue only. We are all acquainted with that celebrated mystic of the Eighteenth Century, "Anton Mesmer," who claimed to possess in himself an occult force derived from the stars, which he exerted upon his patients by stroking their bodies with magnets. He, in after years, discarded his theory of "Siderial Magnetism," and in the City of Paris practiced upon his patients with manipulation, aided by dimly-lighted rooms and soft music.

It is a fact of history that Mr. Mesmer benefited many hysterical women and nervous men whom he treated by what he termed "Animal Magnetism."

Upon investigation by a committee of physicians appointed by the French Government for the purpose of ascertaining the real facts about this man of mystery, it was quickly discovered that his theory of "Mesmerism" was a downright system of charlatanry and jugglery, and that Dr. (?) Mesmer himself was an empiric and imposter of the worst type, and was accordingly driven from France.

We also have the so-called mind healers or Christian Science sect, playing on the fancy and imaginary powers of the over-credulous, trying to make people believe that there is no such a thing as pain or disease. The founder of this beguiling sect, while sojourning in the present world, exhibited about as many eccentricities and inconsistencies in her life as the theory and

practice of her teachings have exhibited before the world—her imprudent acts and uncouth tendencies toward her three husbands, her bad treatment toward her only son and legitimate heir, saying nothing of the many other vagaries that characterized both her youth and old age, all of which combine to make a character that might well be compared to an Eighteenth Century "witch" or a Twentieth Century "fortune hunter."

When we recall the fact that her educational advantages as well as her early social privileges were of the most limited and rudimentary character, and that her only son could not read or write at the age of twenty-six, her three unhallowed marriages with a prospective fourth marriage to her coachman—these facts with her home life, coupled with her sacrilegious tendencies of comparing herself with Christ in the matter of healing the sick and working miracles, should appeal to any sane person and cause at least the stronger minds of her thousands of followers to pause and think of this departed spirit, only as a *gigantic, simple-minded fraud*, who for the sake of self-aggrandizement and the filling of her coffers with the blood money of the credulous populace, has *passed on*, leaving her ever-faithful followers as a wandering tribe in the *wilderness of doubt*. May the time soon come when these benighted minds may have the scale lifted from their spiritual eyes.

From the time of "Hierophant of the Egyptian Temples," down to the present, various sects and cults of pretended cures and healers of human diseases without the aid of medicines, have appeared under many and various names, all claiming to possess the power of healing thru some mysterious magnetic agency of their own.

They operate entirely outside of the jurisdiction of medical science, and in a large measure, rest their claims for success upon the credulity and imagination of their deluded victims.

In all such instances, however, experience and investigation have clearly shown that these are nothing short of mystagogues, frauds and imposters of the worst type.

Our country is today filled with fakers of all kinds, some of whom date their origin back to the fall of Rome, when civilization was in its most chaotic state, while many others, strange to say, belong to our much boasted Twentieth Century civilization.

We are today facing an evil, a curse that is about as great a menace if not far more reaching in its deleterious effects on human health, than any of those previously mentioned. I refer to the gigantic *patent nostrum evil*. The promoters of this curse are of our own woof and blood, and are knowingly deceiving their credulous friends and neighbors wholly for the sake of filling their coffers at the expense of the health and life of their fellowmen. We have strewed over the country in every village or cross-road store, as well as in our city drug stores, thousands of so-called cure-alls in the shape of cough and consumption remedies, some of which contain opium and other habit-forming drugs, but under disguised names. Hostetters' Bitters contains 44 per cent. alcohol, Peruna 28 per cent., Lydia Pinkham's Compound, Ayer's Sarsaparilla, Swamp Root, Wine of Cardui, Vinol and a host of others, including Tanlac, etc., that contain from 5 per cent. to 35 per cent. alcohol, are today making drunkards of both sexes, in this and other countries, that permit their sale.

According to the report issued by the president of the American Proprietary

Medicine Association, the sum of \$181,000,000 was expended last year in the United States for *patent nostrums*, many of which, as previously mentioned, contain a large per cent. of alcohol, morphine and other habit-forming drugs, annually making thousands of drunks and fiends to be cared for by our municipal charity associations.

Notwithstanding our pure food law, the increase in the use of patent nostrums, especially since the dry law has been enacted, is astounding, to say the least.

The municipal, fundamental weakness of this pure food law, is that it does not touch the *vital matter of newspaper advertising*. Printer's ink, in the form of alluring advertisements, is the *net* that catches the credulous victims of quackery.

Take away from the patent medicine swindler and the many other fakers that hide under the cloak of medical healers and medical science, their ability to fill the advertising columns of the daily press and the weekly and monthly magazines with every imaginable variety of lie, and their business would go out of commission in less than six months. It is admitted by the quacks themselves, that 90 per cent. of their earning power is represented by newspaper advertising, and that fully 50 per cent. of all profits go to fill the coffers of the newspaper *owners*. It has been estimated by reliable authority, that there are today in the United States being sold over the counter, over 37,000 different proprietary nostrums, and only 5,000 criminal prosecutions have been reported by the Bureau of Chemistry: Out of these prosecutions, only about 3,000 of these swindling frauds have been exposed, their secrecy torn away and their deviltry shown up. Let the medical profession, with the cooperation of the

United States Public Health Service and the Bureau of Chemistry, start a more active campaign against this national enemy to human progress and everlasting disgrace to our civilization. Let the legislative committees of the various State Medical Associations hold annual conventions in Washington during the sessions of Congress and be on hand when bills or amendments are introduced pertaining to public health and preventive medicine and the eradication of fakers and nostrums. We need a few more *live wires* like Senator Owen of Oklahoma, to champion the cause of progressive medicine in our national legislative halls, and meet the onslaughts of the paid or bought-up opponents.

It is a well-known fact, that the longevity of a nation depends largely on the character of its civilization and the habits of the people. When the enemies of health, such as habit-forming drugs, nostrums, alcohol and tobacco intemperately used, illegitimacy and violation of the law of eugenics, are ignored, we cannot expect much progress in our civilization nor from a health viewpoint, saying nothing of our longevity.

For ages health officers have been waging a war against cholera, tuberculosis, typhoid fever, yellow fever, plague, malaria, etc., which result from virulent germs of protozoa, but today the profession of medicine is turning its attention largely to the *evil span* of mankind, which is expressed and magnified by the mental and physical wrecks found in our hospitals, prisons, jails, reformatories and insane asylums, many of whom constitute the sad pictures of the World War. "Statistics show that over 2,500,000 feeble-minded babies are born in the United States annu-

ally, caused largely by habit-forming drugs and narcotics."

Drugless healers and secret nostrums, with fair promises, delude the mind,
And thrive on all that tortures and deceives
human kind;
Void of all honor and truth, avaricious and
rash,
The daring, bold tribe compound their
boasted trash;
Bitters, syrups, suppositories, solutions or
pills,
Tempt the credulous, sick poor to trust
their lying bills,
And many, many names of Shylocks turned
to squires,
Aid the bold, deceptive language of these
blushless liars.

How strange to think, in this nefarious
trade,
That sensible men and women are dupes by
fakers made!
That creatures, nature meant to clean the
street,
Have purchased lands, mansions, parks
and seats;
No class escapes them, from the poor man's
pay
The Faker and Nostrum trade, takes no
small part away.
Down with Osteos, Chiros, Shysters and
drugless schemes,
That prey upon human credulity, and then
steal their means!

Yesterday.

All to ourselves, we think of you;
Think of the things we used to do;
Think of the things we used to say;
Think of each happy yesterday.
Sometimes we sigh; sometimes we smile;
But we keep each olden, golden while
On memory's golden file.

—SALLIE EDITH ROBY.

Happiness.

He who would have true happiness
Must cultivate content,
And know that into every life
Some drops of rain are sent.
—Common Sense.

THE APPETITE IN EXOPHTHALMIC GOITER.

BY

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Of all the chronic affections characterized by wasting of the body, there are two, namely, diabetes mellitus and exophthalmic goiter, which stand out preeminently as being associated with an increased appetite. Both these diseases possess other clinical features in common and, indeed, are frequently misdiagnosed one for the other. In both affections there are, in addition, excessive thirst, loss in weight, weakness, hyperglycemia, glycosuria, and an increased basal metabolism.

When asked concerning the appetite, the subject of Graves' disease usually responds: "My appetite is fine. I eat all day, but I don't know what becomes of the food. I am losing weight constantly." These patients may complain of wasting, nausea, vomiting, diarrhea, and hyperhidrosis, but the appetite is sharp, even ravenous. Yet it is the wasting, nausea, vomiting, diarrhea, and hyperhidrosis, which bring about a hunger of the body, asserting itself in a good appetite. Despite the good appetite, however, wasting continues, often to such extreme that the patient may lose a goodly fraction, sometimes half of the body weight within a few months. Any attempt at correction of the situation requires a consideration of several factors pertaining to the gastrointestinal tract, the quality and quantity of the food taken, and the regularity of eating.

Unless nausea, vomiting and diarrhea are successfully controlled, all efforts at

treatment will prove of no avail. These patients are commonly subjects of pyrosis, hyperchlorhydria, and a hyperexcitability of the vomiting reflex. The slightest emotion, excitement, or even physical exertion, and up comes the meal. Remedies calculated to overcome the gastric condition are imperative and should be employed at once. Diarrhea is even a graver symptom, frequently amounting to a dozen or more stools a day. This, too, must be immediately controlled, preferably without the use of opiates, if we are to achieve good results in treatment. Indeed, gastrointestinal difficulties, especially vomiting and diarrhea, may become so serious as to mean the loss of the patient. It is only when these symptoms are kept in abeyance and finally controlled that the patient's good appetite serves him in the curbing of the perpetual wasting.

The quality of the food must be such as to be characterized by a minimum or absence of flesh foods and a maximum of carbohydrates and fats. The matter of the reduced carbohydrate tolerance characterizing the clinical picture of patients with Graves' disease may be ignored in treatment, since these manifestations of the disease disappear with the amelioration of the syndrome. A menu to be acceptable to the patient and at the same time to be palatable requires a large variety of well-selected substances appealing to the eye and devoid of the possibility for monotony. It is frequently a tax on the ingenuity and patience of the medical attendant to find combinations of food of sufficient variety, in the absence of flesh foods, to prevent monotony. But well-directed efforts are usually successful, and in course of time, the patient is looking forward to his meals, even tho he is deprived of his beef-steak. Needless to

say, the condiments, spices, tea, coffee, and alcoholic beverages are to be interdicted. A plentiful supply of good, wholesome water is a useful adjuvant in treatment.

With regard to the quantity of food, the difficulties frequently appear insurmountable. The patient's formerly voracious appetite may soon disappear when an effort is made to have him take the great quantity of food which it is necessary to ingest in order that the weight may reach the satisfactory figure within a reasonable time. If we are to take into account (1) the excessive plus basal metabolism, (2) the amount of weight already lost, and (3) the need for a moderate excess of weight as a condition for recovery or a sort of safety point at the time of the patient's discharge from treatment, it can be seen that the patient requires at least twice as much food daily as under normal circumstances. The dietary skill and persuasive powers of the internist should now be directed toward having the patient take a far greater amount of food per day than his appetite and desires dictate. In other words, the patient must be made to eat, not for the sake of satisfying his hunger, but more or less mathematically and mechanically. The appetite, tho good and sharp, is usually quickly satisfied, unsustained and capricious. Thus, after the first few mouthfuls the patient finds himself satiated and stops eating, only to feel hungry an hour or two later. Many such patients have accustomed the stomach to hold and digest a small quantity of food at a time, and no more. They must be informed that the stomach is a pouch capable of holding several times the quantity which they happen to find convenient to take at a given time, and an effort must be made to habituate the organ to take more food at a sitting.

Since such patients require at least twice as much food as their normal standard, it is necessary so to regulate the time of eating as to permit the digestive functions a fair degree of rest between feedings. To this end, I find a dietary calling for breakfast, lunch and dinner so arranged that there are intervals of at least six hours between them. Three hours after each meal a so-called extra nourishment is prescribed, consisting of a quantity of permissible foods corresponding in caloric value to about half the value of the meal itself. Thus, the patient takes three large meals a day supplemented by three smaller meals or extra nourishments, each feeding separated from the one preceding by an interval of three hours. Tho this quantity of food per day seems great and at times impossible, especially so in the presence of the customary digestive disturbances so prevalent in these patients, in course of time, I find no difficulty in having them take what is apparently an enormous quantity of food each day for weeks and months until such time as the normal weight is not only fully restored but a considerable excess is obtained. The most important prerequisites to this dietary plan are a religious adherence to the qualitative side of the menu, careful mastication of the food, and the necessary mental attitude on the part of the patient toward the entire régime of treatment. I regard this last requirement as the most important.

Finally, I would state that the internist who has succeeded in affecting a ten per cent. increase over and above the patient's normal standard of weight during a course of treatment in a subject suffering with Graves' disease has cured his case. An internist who has succeeded in doing this has also succeeded in affecting a restoration to

normal of the basal metabolism and the pulse rate. Normal weight, basal metabolism, and pulse rate are synonymous with recovery from Graves' disease. It means that the patient's body and mind were practically reconstructed not only thru dietary efforts, but thru hygienic, medicinal, psychotherapeutic, and other measures, in such a way that the patient has been taught how to work, to play, to sleep, and even how to think. Thus the patient, properly adjusted to intrinsic and extrinsic environments by the elimination of vicious circles which serve as predisposing and exciting causes of Graves' disease, begins to enjoy unprecedented health, and is more useful than ever to self and society.

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THE IMPORTANCE OF REFLEX DISORDERS CAUSED BY RECTAL DISEASES.

BY

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How little importance is attached to the effects of rectal disorders upon the general condition of the patient is astounding, especially in view of the immensity of these symptoms.

That diseases of the anal region are extremely painful no physician doubts, for usually the majority of them beyond middle age have at some time been so afflicted. What is most painful to endure is as a rule most doleful in its effects upon the human economy. Nothing so wracks a man as pain. The intensity of pain is due first to the nerve supply of the part and is more nearly in direct relation to it than the profoundness of the disease or the extent of

the injury. A corneal ulcer is nerve wracking. So is an anal fissure. The nerve supply to both is extensive.

The similarity of these two conditions is so striking that it is worthwhile to call attention to it. Both are merely abrasions coupled with infection giving rise to nerve irritation. In both we have involuntary muscle action coming into relation with highly developed sensory nerve endings. The constant irritation due to infection causes an upset in the involuntary muscle control which in both gives rise to spasm. In the eye it is the ciliary muscle, and about the anus it is the sphincters. To control this in the eye atropine or like acting agent is used, while in the rectum we divulse the muscles usually giving ether. In both the variety of reflex symptoms is great. It is a matter of common knowledge in the profession that corneal ulcers give rise to profound symptoms but anal fissures are passed up daily as only a minor ailment.

The reflex symptoms of anal fissure are confused and the organ affected is generally taken to be primarily at fault. Of these the bladder symptoms are frequently held to be primarily at fault. It is for this reason that women and men suffering with low grade rectal infection are often treated for burning urination and frequency by bladder irrigations, etc. Every case of frequency and all cases of obscure irritation on voiding urine should have a careful rectal examination.

The nerve supply of the prostate gland, the seminal vesicles, posterior urethra and inguinal region are closely related to the rectum. This should not be lost sight of when patients, especially those types that we are likely to classify as sexual neuro-rasthenics, present themselves for examination. Many cases of chronic prostatitis, who

have submitted to massage treatments for months, have learned to their great joy that a few local treatments to the rectal mucosa cured their heaviness. Seminal vesiculitis is caused by rectal reflex in many cases and undoubtedly many cases of chronic posterior urethritis are primarily reflex in their origin and should not be irrigated. Any and all of the diseases of the genito-urinary system may be so closely simulated by reflex disturbances that we must ever be on the lookout for them. Then, too, contractions of the sphincter muscles about the anus are very often caused by bladder stone, and infection of the bladder. And it is not uncommon in the writer's experience to have difficulty in explaining to a patient that there is nothing wrong with his rectum in urging him to have his bladder examined or his prostate looked after. Two parts of the body so closely allied in nervous and muscle association both in female and male cannot do other than reflexly affect each other in disease of one or the other.

There are gradations of severity of anal fissures from the types that cause hysterical convulsions because of the pain to that of a slight burning after stool. The anal mucosa is diseased in all types throughout its circumference. The rectum proper shows inflammatory processes of varying intensity and frequently the cause is in the low grade chronic infection of the rectum. For this reason anal fissure should not be regarded as a disease *per se*. It is most often a secondary trouble and if for no other reason it should not be regarded lightly. Recurrence of this condition after thorough division should always lead one to suspect other disease.

The reflex disturbances of the multiple fissured anus with its accompanying pruritis

will, if permitted to burn its fire, ruin the health of the strongest. Surely one cannot believe that these sufferers are toxic only. They suffer most from constant wear and tear upon their nervous systems. A good night's sleep is unknown to them regardless of local application applied upon retiring. These types are most generally caused by small sinuses draining beneath the skin or blind fistulae. They are of a low grade infection and for this reason the patients neglect themselves and cannot believe their disease serious. In practically every case the primary trouble is deeper seated than the skin and is curable only after painstaking treatments and untiring search for disease within the anus, rectum or large bowel, but in every type regardless of the cause the reflex reaction is severe. Unbroken rest is essential to health and there is such an animal as "nervous indigestion" regardless of our ultra-scientific friends who would have us believe otherwise. It is seen frequently in these cases. The picture can be painted even worse for often these patients so suffer to lead them to despair of life itself.

A study of the sympathetic nervous system of the abdomen and pelvis will establish this one thought—the rectum is part of the abdomen. In fact, we are likely to forget the close association of it to the other abdominal organs if we do not so consider it. For this reason a rectal disease is an abdominal disease, not because of location but because of nervous connection.

The hemorrhoidal plexus of nerves is the sympathetic system of the rectum. It is derived directly from the upper portion of the pelvic which in turn is a direct branch of the hypogastric and aortic which is so closely associated to the solar system that you have a hard time dissecting the two apart.

This network of nerves goes to make up the so-called abdominal brain. It explains why one single hemorrhoid will give rise to symptoms that are similar to uterine colic and often ovarian disease. It is very likely no uncommon thing that hysterectomy has been performed to relieve persistent backache and vague pelvic pains (as was done in one case of the writer) giving no relief which was obtained only after proper attention was given to large ulcerated hemorrhoids and severe rectal infection. You hear much of reflex rectal pains following pelvic operations in women. It is more likely the primary cause is often located within the rectum. The female pelvis in doubtful pathologic conditions should not be "overhauled" until the operator is certain that the rectum is negative. There is not the least doubt that piles can be recognized if the examination is only made.

This relationship of the nervous system should always be in mind whenever women present themselves with rather indefinite pelvic symptoms. Every backache low down is not retroversion and every headache is not a diseased ovary, it may be an infected ulcerated pile or piles.

The close relationship of the sympathetic system to the sensory system of the rectum explains the *modus operandi* of rectal divulsion in causing the restoration of respiratory function during failure in cases of surgical shock; start of this function, in the newborn and restoration of cardiac and respiratory function in failure in certain convulsions of young babies and children. The act of divulsion reacts upon the sympathetic system causing cardiac and respiratory stimulation quicker than our most powerful drugs can act. There is hardly a physician who has not seen or used this method some time in his practice. This should not be

lost sight of when seeking to explain the profound loss of weight, irregular heart action and loss of general health in an ordinary case of hemorrhoids.

One case is recalled whose family physician told him that he had only a few months to live because of the advanced pulmonary tubercular condition from which he suffered. He was advised to go West for a change of climate. As he said "it will do no harm to have my piles treated before going and it may help me." Careful examination revealed no active tuberculosis.

This patient had lost weight to such an extent that it was hard to believe it was entirely caused by his rectal condition. However, he recovered completely, regained his taste for food, his assimilation and digestion return and he gained weight rapidly. He was able to sleep and able to eat because his nervousness was relieved. That a patient could be so undermined in health by rectal disease alone is hard to believe but when you stop to consider the nervous shock of all rectal diseases and understand the close relationship of all abdominal conditions it is explained.

The great trouble with the profession as a whole they think of the rectum as something apart from the abdomen. It is as much a part of the abdomen and can thru reflex action cause as much stomach trouble as the appendix. The first symptom of piles is not always bleeding or protrusion—it may be digestive disturbances. A patient recently consulted the writer saying: "Doctor, I've had a most complete going over in a local hospital. They washed out my stomach, put something in my bladder, examined my blood, etc., but, doctor, they surely forgot—they did not examine my rectum and I have trouble there." He had large internal ulcerated piles.

Hemorrhoidal conditions of long standing, where the patient has for years been accustomed to putting his tumors back, as a rule do not give rise to the severe reflex disturbances that the acute ulcerative internal types do. This is explained in that the protruding types have become thickened. The nerve endings are more or less deadened owing to the years of trauma. It is also accounted for in that they can drain externally owing to the relaxed condition of the muscles which leaves the anus more or less patulous at all times.

We have been so engrossed with the pathology explained only by the microscope that we are about to forget the major pathology that is perverted physiologic function. This is most true in reference to the rectum. It is to hold feces temporarily. How seldom this is true. It is generally filled with fecal material going thru a drying process. It acts as the greatest absorber of toxic water known. This is due to disease as a rule of the lower rectum and anal canal.

The presence of piles and infected areas which destroy the essential sensory reflex arm of the act of defecation is the real be-

ginning of the great majority of cases of constipation—in other words, piles cause constipation and not constipation piles as is so generally taught.

If the public could only learn to have their rectums examined when they first begin with constipation we would see far less of inoperable cancers. They would also learn that infection of the lower rectum and anal canal is the cause of their vague leg aches, distressing indigestion, that painful hip, that low pelvic pain, and the annoying heaviness in the perineum.

The curing of internal piles or other disease of this region will bring about rectal sensory activity again and restore regular bowel movements helping the patient to regain his normal habits that mean so much to every man.

The rectum is part of the abdomen even tho its location may seem to disqualify it. It is, thru its close nervous association of its sympathetic system and sensory nerves, the body's greatest originator of reflex symptoms that are very little understood today. It is the neglected field in medicine and surgery.

Rooms 414-417 Cleveland Life Bldg.



FAITH IN THE PHYSICIAN AN IMPORTANT ELEMENT IN ALL TREATMENT.

The good physician of a former generation knew his patients and was never too busy to lend a helping hand in any matter relating to their physical and mental welfare. He was not only their medical adviser further declares Mathias Nicoll, N. Y. State Jour. of Medicine, but, next to the minister of God, their counsellor and guide. His cures were often seemingly miraculous, for the reason that he inspired faith in those who sought his help. And it is that faith, born of keen personal interest, which is so largely denied the modern physician.

Special Article

THE VALUE OF FRUITS IN THE DAILY DIET, WITH ESPECIAL REFERENCE TO THEIR TONIC AND HEALTH-GIVING PROPERTIES.¹

What man achieves after only the most laborious effort and by devious and painful progressions, Nature accomplishes with ease—an ease which is despairing to those who stubbornly ignore her and comforting to those who wisely allow themselves to be led by her. It has become a commonplace of modern science that in Nature can be found the solution of every mystery of life, and the history of all discovery and invention is the record of man's bungling and imperfect effort to outwit Nature, only to attain his end finally by yielding to her. Inventive genius today, when facing a baffling problem, turns to Nature for guidance, asks itself how she has solved the problem in her own harmonious universe, and then proceeds to imitate her. For, after long and costly experience, man has learned that Nature is a more willing and efficient worker than any mechanism his brain can contrive and that the overhead cost of employing gravity, centrifugal force and atomic vibration is far below that of his complicated inventions.

The tendency of modern invention and modern science is to collaborate with Nature, not to defy her. The glider is an

¹This paper inaugurates a series of special articles which will appear from time to time, and represent certain special studies and investigations by the editorial staff of AMERICAN MEDICINE. They will take up a wide variety of topics and, we hope, will prove of interest and help to our readers.

excellent example of this: the airplane deprived of man's intricate contraptions but endowed with Nature's energies. Tho still in its experimental stage, the glider has proved once again that Nature is the greatest of inventors and that the power which man so eagerly seeks is within easy reach if only he can penetrate her secret. Man's locomotive achievement, the automobile and the airplane, requires the minute assembling of thousands of mechanical parts and the carefully measured use of certain natural products to propel a vehicle at the rate of some hundred miles an hour. Yet Nature, without such elaborate preparation and such attention to detail, makes our massive earth spin on its axis at the rate of more than one thousand miles an hour, makes the earth race around the sun, the moon race around the earth, and the stars speed thru the heavens, at a rate beyond the conception of man.

For Nature operates according to a few very simple principles. Man stumbled accidentally upon one of these in the discovery of electricity, and he has succeeded in producing marvels without understanding the real nature of the thing he discovered. If modern invention is still in its infancy, it is because the happy accident of electricity has not been repeated in other realms and because Nature's secret remains impenetrable still. Perhaps it always will remain impenetrable and man's progress may be merely a stumbling upward in the dark, from time to time chancing upon forces of Nature which he learns to harness without comprehending. But it is not altogether inconceivable that sometime, tho in the very far future, this secret may be solved and the force that operates the universe may be so understood and controlled as to do the most insignificant chores for man.

Fortunately for man and his well-being,

however, the obscurity that still prevails in the inorganic world does not exist in the organic realm, where Nature has guarded her secret less jealously. The properties of organic matter are more easily discerned, more promptly adapted. The progress of medicine in recent years is due in no small part to stricter adherence to these properties, a recognition of the laws which they obey, resulting in a closer cooperation with Nature. Even the unlettered layman understands today that his physician does not "cure" him, that he merely cooperates with Nature to restore health to an individual who has deviated from the course laid out by Nature and who is paying the penalty of ill health. It is one of the unique features of modern medicine that its advance is really a retrogression, but a retrogression of the best sort, harking back to the primitive healing principles developed by a civilization cruder but closer to Nature than we are today, and understanding that for every ill there was a remedy in the earth's ample vegetation. The modern healer, however, has this superiority over the primitive medicine man: that while the latter made a mystery of his powers, and used them to astound and often terrify the tribe in which he lived, the physician today frankly acknowledges that he is merely Nature's interpreter and intermediary and is only too quick to reveal to his patients the advantages of a strict adherence to Nature's laws.

Physicians today are greatly helped by a wider degree of enlightenment among the public, which has come to learn that the art of *keeping* well is as important as the process of *getting* well. From year to year the percentage of individuals awaking to the necessity of keeping fit and not waiting for a breakdown in the functioning of the human machine is growing greater. This ex-

plains the wide popularity of tonics and other products aiming at building up the body. Unfortunately, however, public attention has not been adequately directed toward the building and fortifying properties of Nature's own tonics, direct from her vast laboratories and prodigally offered for man's well-being. Every orchard, every fruit grove, is Nature's laboratory. The biblical tree of knowledge, forbidden to man, here yields to the tree of health, easily accessible to man. The building and fortifying properties of the fruits of this tree cannot be overestimated.

We do not use the word "fruits" in its figurative sense alone, but give it its most literal interpretation. The tree of knowledge was a feature of the Garden of Eden, but the tree of health is no mythical singularity, and its fruits are the commonplace apple, the orange, the peach, the pear and all the other varied products of Nature's laboratory. The virtues of these fruits are no secret and have been known to man for many centuries, their tonic value having been accorded ample recognition in the most primitive cultures. Their popularity has persisted, and the public has perpetuated their importance in such catchy tags as "an apple a day keeps the doctor away." Somehow, the apple, which tempted the mother of us all, has continued the most widely consumed fruit in the long list, perhaps because of the stroke of genius of the most talented of all publicity experts: the snake in the biblical allegory. That splendid piece of propaganda, unfortunately, has not been repeated since, and the other fruits have had to recommend themselves on their merits. However, they have not done badly by themselves, particularly in this country, where the consumption of fruits is constantly on the increase.

The public is becoming more and more enlightened regarding the dietetic value of fruits, and an attempt here to enumerate the specific virtues of apples, oranges, pears, peaches and the other fruits would be superfluous. It appears to us, however, that in the general awakening to the value of fruit, one variety has not enjoyed the attention it deserves—dried fruit. Raisins, figs, prunes and apricots have come to enjoy a culinary prominence despite this neglect, but the public has made this happy choice without the advantage of as frequent an insistence on their healthful properties as the more orthodox fruits have enjoyed. And yet dried fruits recommend themselves very highly apart from their appeal to the palate.

As an example, let us take one of the homeliest and best-known of Nature's products, the modest violet of the fruit world—the prune. The prune has found its way even to the table of the epicure and appears in a great variety of preparations. Is it a happy accident which has given that fruit such a prominent place on the menu of so many homes? Did the public light upon the prune as a lucky experimenter lighted on electricity? Or has it, despite its modesty, won such favor thru a knowledge of its extraordinary properties? Whatever the explanation, the modern kitchen could not have made a better choice, and the growing use of dried fruits, whether the prune, the apricot, the fig, or the date, is one of the big contributing factors to the modern advance in public health.

An examination of the content of dried fruits reveals their importance and their dietetic value. Sugar, one of the most important of the carbohydrates and the most easily digested and assimilated, is the chief nutritive element in dried fruits. Physiologists agree today that the carbohydrates

of our food and not the nitrogenous compounds are the source of the body's muscular energy. The carbohydrate content of dried prunes is 63.37, only a little less than that of flour, which is 75.1. Dried apricots have a carbohydrate content of 62.5, slightly less than prunes and somewhat more than dates. The protein content of prunes is 2.54 and of apricots 4.7. But in mineral content, as well, fruits reveal their high value. Mineral ingredients of food fall into two classes: base-forming and acid-forming. In the former are included potash, soda, lime, magnesia, etc. The latter comprises sulphur, phosphorus, chlorin, etc. The acid-forming elements dominate in meat and eggs. In fruits, however, the base-forming elements are largely in excess. The mineral content of dried prunes, for example, is 2.71 and of dried apricots 2.4. The proportion is impressive when compared with that in flour, which is 0.5. Prunes, especially, have a high iron content in calories, yielding only to the seeded raisin on this score among all the fruits.

These figures indicate the high nutritive value of dried fruits. The use of dried fruits yields not only the nutritive value of sugar but whatever other hygienic and medicinal value they have by virtue of the salts and organic acids found in them. And if the normal craving for sweets directs both child and adult to these fruits and stimulates a desire for them, it is because Nature has planted this desire in man from the very first. Mother's milk contains 50 per cent. sugar, and the child is thus set upon the pursuit of sweets which it retains, tho in a somewhat diminished degree, in latter life. Nature thus points the way and those who follow fall heir to her secret and her heritage of health.

But prunes, apricots and other dried

fruits recommend themselves not only for their nutritive value, not only as a natural tonic, but, if one may say so, for their "tuning up" properties. Prune juice, particularly, is an excellent laxative for infants and children, especially those too sensitive to retain other fruit juices. In the case of adults, prune juice taken in the morning is an ideal bowel laxative. In obstinate cases of constipation, the laxative value of prune juice may be fortified in the process of cooking by the addition of senna leaves; tied in a small bag.

It is gratifying to observe that some of the leading chefs of the country are giving as much attention to science as to art in the preparation of their menus, and, while continuing to cater to the palate, are mindful of the health value of the foods they prepare. Victor Hirtzler, chef at the St. Francis Hotel, San Francisco, recently prepared a dinner with the unique purpose of emphasizing the importance of the prune as an article of diet. The prune appeared at practically every course, attractively served. Hirtzler is an evangelist as well as a chef, and other culinary artists would do well to follow the path he has blazed. Explaining his motive in selecting the humble prune for such distinction, Hirtzler said: "I look forward to the time when the true food and gastronomic value of dried prunes and apricots will be properly appreciated—when chefs and cooks and housewives generally will see that they occupy a much more important place on their menus than they do now. For it would be hard to find two foods that adapt themselves so readily to so many uses."

With such collaboration on the part of enlightened chefs, the task of the physician becomes easier, and the aim of Nature is facilitated.



An Appraisal of Ovarian Therapy.— According to Novak (*Endocrinology*, September, 1922), it is unfortunate that most of the indications for ovarian therapy are of the subjective variety. Clinical results alone are obviously less reliable than would be the case if it were possible to control them by animal experimentation. The more conservative element in the medical profession has within recent years frowned upon the practice of proprietary medicine manufacturers of bolstering up their claims by means of "clinical reports" as to the therapeutic virtues of their preparations. However absurd these claims might seem to be, the graphophonic detail man could meet every objection by the stock argument that "after all, doctor, it is results that count," as if equally brilliant results could not be obtained, in many subjective disorders, by patent medicines of the most flagrant sort or by bread pills alone. The only difference between the innumerable patent medicine testimonials found in newspapers and many so-called "clinical reports" is that in the one instance the gullibility of the laity is displayed and in the other the credulity of the equally human medical profession. He hopes that these remarks will not be misunderstood, for he does not discount the unquestioned value of honest clinical observation carried out in a really scientific truth-seeking spirit. To the clinician we are, as a matter of fact, indebted for some of the most important contributions to endocrinology. For the most part, however, we must look to the laboratory worker for the really substantial advances in this field of work.

Among the conditions for which ovarian extracts have been recommended may be mentioned amenorrhea, functional uterine bleeding, dysmenorrhea, infantilism of the generative organs, the vasomotor and nervous disturbances of the menopause, sterility, obesity, repeated abortion, vomiting of pregnancy, pruritus vulvæ, kraurosis vulvæ, deficient mammary secretion, epilepsy, and Graves' disease. To these might be added

quite a number of others even more illogical than some enumerated. Only a few of these have any claim whatsoever to serious consideration.

The use of ovarian extracts would appear to be a rational procedure in the treatment of amenorrhea of the so-called functional type, especially that seen so commonly in association with the adiposogenital syndrome. Novak has treated many such cases with extract of whole ovary and many with corpus luteum extract, and has not been able to convince himself that the patients have derived any very great benefit. This is especially true when these extracts are given alone, *i. e.*, when they are not combined with pituitary or thyroid extracts. In the latter case he has at times obtained results which were at least encouraging. His impression, however, is that these same results would have been obtained had the ovarian extracts been omitted, and that the thyroid was the potent element in the treatment.

Precocious Puberty.—In spite of the fact that our knowledge of the internal secretions is rudimentary and confused, Reuben and Manning (*Archives of Pediatrics*, December, 1922) assert that great progress has been made during the last ten years in dispelling the uncertainty which surrounds their function both in health and in disease. Everyone must be convinced that these organs are second to none in the body in their influence on physiology, pathology and clinical medicine. Disturbances in the internal secretions are responsible for anomalies of growth and morphogenesis, for disturbed nutrition, disturbed excitability of the nervous system, for loss of resistance to infection and intoxications; they are also responsible for certain dyscrasias and morbid temperaments; and the equilibrium of the nervous system, especially the sympathetic, is also maintained by the internal secretions.

In studying disturbances of the ductless glands, one fact has been clearly brought out and that is that the physiologic relation of all ductless glands is an intimate one, and that in pathologic conditions of one of them all the other glands are affected. The influence of one gland on another may be

compensatory or inhibitory. The interrelation of the endocrine organs is a very close one and in determining which gland is the cause of disturbance in any particular case we must always remember that certain symptoms may be due to overactivity of associated glands.

The relation of the glands to one another and to the body as a whole may best be expressed by substituting certain words (suitable to our subject) in a passage of Pope's "Essay on Man."

"Look round our internal secretions ; behold
the chain of love

Combining all below and all above.

See plastic nature working to this end,
The single atoms each to other tend
Attract, attracted to, the next in place
Formed and implied its neighbor to em-
brace.

See secretions next, with various life en-
dued,

Press to one centre still, the general good :
See dying glands life sustain,
See life dissolving vegetate again.
All glands that perish other glands supply,
(By turns we catch the vital breath, and
die)

Like bubbles on the sea of matter borne,
They rise, they break and to that sea return.
Nothing is foreign ; parts relate to whole ;
One all extending, all preserving soul
Connects each gland, greatest with the least,
Made gland in aid of organs and organ of
glands ;

All serve, all serving ; nothing stands alone ;
The chain holds on, and where it ends un-
known."

The Relationship of the Endocrine Glands to Neurology and Psychiatry.

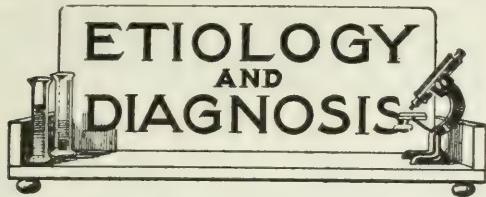
Dercum, writing in the *New York Medical Journal* (October 18, 1922), maintains that a brief consideration convinces us that many cases of nervous and mental diseases present problems which are essentially those of disorders of metabolism. Many have to do with profound nutritional disturbances which have their origin in defensive reactions of the organism to intoxications. Such intoxications may arise from without, or they may be from within, the organism. Among the former are the various infec-

tions and intoxications of extraneous origin; among the latter are toxic states due to abnormalities of the various glands of internal secretion and of other hormone-producing structures. Dr. Dercum discusses the more serious forms of arrest and deviation of development, as in idiocy and the "symptom groups" due to the involvement of special glands, as in exophthalmic goiter, acromegaly, and dystrophia, and emphasizes the point that when special clinical pictures of these groups are studied the origin of no affection can be narrowed down to one gland but that all present symptoms can only be explained by the involvement of several glands. As for the neuroses, psychasthenia, hysteria and hypochondria, for example, these, according to Dr. Dercum, present, not only in the history of heredity but also frequently upon the very person of the patient, the evidences of an imperfect or deviated development and it is argued that it is not difficult to understand that an organism in which the power of development has been enfeebled should present abnormalities of the glands of internal secretion. A similar argument applies, to a greater extent, to the grosser forms of arrested development. Dr. Dercum insists that the glandular failure which calls forth the symptoms of any given case is always biological and, consequently, treatment must frequently be limited in its effect. However, he believes in organotherapy, at any rate, in the treatment of the neuroses and, in his opinion, slight disturbances of the thyroid gland should always be looked for in cases of so-called psychasthenia. Also, he is a believer in pluriglandular therapy and thinks that in this connection it should especially be borne in mind that the persistent administration of small doses of thyroid extract will stimulate the general tissue metabolism.

Studies in Pancreatic Function.—Abnormalities in enzymatic activities of duodenal contents, demonstrated by the methods and procedures used in the work here reported, were found by McClure and Jones (*Boston Medical and Surgical Journal*, January 13, 1923) (a) in the presence of some organic lesion involving the pancreas primarily or secondarily; or (b) when clinical, operative or necropsy findings in-

dicated the possibility of derangement of the external secretory function of the pancreas. It seems fair to the authors to assume, therefore, that such abnormalities show pathologic involvement of the pancreas or its ducts, and that the involvement of the pancreas may be mechanical or functional in nature. If this assumption is correct, then it is justifiable to conclude that estimation of enzymatic activities of duodenal contents furnishes an index to the activity of the external secretory function of the pancreas. In achylia gastrica and pernicious anemia, no abnormalities in the activity of the external secretory function of the pancreas were demonstrable, as measured by the enzyme concentration of duodenal contents. These findings suggest that the presence of hydrochloric acid is not necessary in order to stimulate normal pancreatic secretory activity. Under the experimental conditions used, enzymatic activity was not demonstrably affected by the presence or apparent absence of bile in the duodenal contents. The external secretory function of the pancreas, as measured by the enzyme concentration of duodenal contents, was found to be much depressed in chronic pancreatitis. Acute pancreatic necrosis, cancer of the head of the pancreas and lesions obstructing the pancreatic duct were accompanied by marked abnormalities in enzymatic activities of duodenal contents. Obstructive lesions caused great diminution, while acute necrosis usually caused dissociation in enzymatic activities. Estimation of enzymatic activities of duodenal contents furnished findings of value in the differential diagnosis between benign and malignant lesions, causing obstructive jaundice. Dissociation of enzymatic activities of duodenal contents is interpreted as showing derangement of the external secretory function of the pancreas. Acute and chronic cholecystitis and infectious (catarrhal) jaundice were accompanied by dissociation of enzymatic activities of duodenal contents. This finding suggests that there was associated derangement of the external secretory function of the pancreas.

Rhus Aromatica is of decided advantage in cases of incontinence of the urine in children (Podolsky, *Med. World*). The dose is 3 to 10 drops morning and evening.



The Failing Heart.—Dr. Paul D. White, in the *Boston Medical and Surgical Journal* (November 23, 1922), divides heart failure into two groups—the congestive type and the anginal type. All causes of heart disease are responsible for failure of the congestive type. Among the commonest etiologic factors are arteriosclerosis, rheumatic fever, chronic hypertension, syphilis and chronic hyperthyroidism. The immediate cause frequently is auricular fibrillation. Its recognition and proper treatment by digitalis is very important. It is necessary to differentiate heart failure of the congestive type from effort syndrome, hyperthyroidism, acute infections, pulmonary disease and anemia.

Heart failure of the anginal type is the result of coronary sclerosis in general, with syphilis sometimes a factor. In this type auricular fibrillation is uncommon, except occasionally in paroxysms. Anginal failure must be differentiated from the heart pain of mitral stenosis, of hypertension and of effort syndrome, and from acute and chronic abdominal disease. Anginal failure may be present in a person with no signs of heart disease and no other symptoms. Digitalis is, as a rule, not indicated in this type of heart failure. The therapeutic measures of choice are nitroglycerine or amylnitrite, morphia, but chiefly rest—physical, mental and dietetic. In both types the amount of cardiac reserve may be amazingly great and the patient may survive the first symptoms of heart failure for many years.

Parkinson's Disease as a Sequel to Lethargic Encephalitis.—H. H. Drysdale (*Ohio State Jour. of Med.*, December, 1922) reports 23 cases of paralysis agitans following lethargic encephalitis. He believes that they apparently disprove our former conception that paralysis agitans is practically confined to the pre-senile period of life as the majority of patients are under 40 years of age and two are under twenty. Post-encephalitic Parkinsonian syndrome seems to pursue a much more rapid course than the usual type of the disease and the prodromal or developmental period is undoubtedly shorter. Several of these cases were unmistakably atypical, and if they are not actual instances of Parkinson's disease, it would be interesting to know to what classification they belong. One patient (Case 15) died after eight months' invalidism and during the progress of the malady, the possibility of a basilar meningitis was entertained. Unfortunately, necropsy was denied. Our knowledge of the etiology of this distressing situation remains indefinite, but the

evidence serves to indicate that infections are active in no small degree. Whether or not these patients would have developed paralysis agitans, regardless of lethargic encephalitis, could not, of course, be ascertained. All of them gave a history of having been victims of sleeping sickness, so-called, but in a few this information lacked adequate confirmation. It is, therefore, possible that their former illness was some other form of encephalitis or a meningitis, as conditions of this character have been erroneously confounded with lethargic encephalitis. The treatment of this new problem has been most disheartening. Hyoscine hydrobromate is of value in suppressing the tremors but nothing has proved helpful in combating the ravages of the disease.

Some Diagnostic Hints in Appendicitis.

In view of the importance of an early diagnosis in appendicitis, the following points given by Robert Earl (*Minnesota Medicine*, October, 1922) will prove of interest: Appendicitis starting with a chill indicates gangrene of either the mucous membrane or the outer layers of the appendix. A chill followed by fever indicates infection. A chill not followed by fever indicates a nervous chill. Fever is always present in the early stages, even in the mildest forms, and is a most important feature. Some surgeons will not operate on a case in which they are confident that no fever had been present in the first thirty-six hours of the disease. Pain over the region of the appendix without gastric symptoms is usually not due to appendicitis, but to salpingitis, oophoritis, or some one of a large number of diseased conditions referring pain to this region. Of referred pain, that of pleurisy especially in children, is a frequent cause. The referred pain in pleurisy is relieved when the patient pauses in breathing; the surgeon's palpating hand can be pressed into the abdomen, without causing pain or tenderness, between each breath and when breathing is stopped. These patients will not be relieved of their pain unless the real cause of the pain is removed, in addition to the removal of the appendix.

Progress in Cancer Research.—Georgine Luden, of the Mayo Foundation (*Minnesota Medicine*, September, 1922), presents the following interesting summary of her views on the modern conception of cancer: 1. The history of cancer research shows that the formerly much derided biochemical conception of malignant growth has not only survived thru twenty-four centuries, but that it is gaining ground today because instruments and methods for chemical investigations are available. 2. The practical value of researches along chemical lines in malignancy has been demonstrated by recent investigations. 3. The complexity of metabolic functions and the number of organs concerned in their regulation make it seem improbable that any single cause of or cure

for malignancy is likely to be discovered. 4. The very multiplicity of the factors underlying malignant growth warrants, however, that the consideration of all factors which tend to disturb metabolic processes in the body, that is, chemical processes, will prove of benefit to the victim of malignant disease. 5. The complete and spontaneous regression of inoperable, malignant tumors in 100 well-authenticated cases is conclusive evidence that the human body can wage a winning fight against malignancy. 6. The knowledge that other patients have become clinically well, altho the odds seemed entirely against them, can do no harm to any patient suffering from a malignant condition and may prove beneficial to him. 7. Early diagnosis and early treatment of malignancy are of primary importance, but the regulation of the diet is of value, also, because it facilitates the chemical tasks of the body.

Early Signs of Rickets.—J. H. Thursfield (*Med. Standard*, November, 1922) lays stress on the following five signs: (1) Head-sweating and restless sleep; (2) loss of muscle-tone; (3) polyuria; (4) pallor; (5) alteration in the bones of the skull. The normal infant of six months or less sleeps without more than a moisture of the skin, wakes for his food, and then sleeps peacefully again. If in sleep beads of perspiration appear about the face and neck, unless there is some obvious illness, the baby has rickets. Even moderate sweating accompanied by undue restlessness and wakefulness has rickets for its explanation; but sometimes the sweating is replaced by loss of fluid from the urinary tract. Such polyuria is a frequent sign of rickets, and even were it unaccompanied by any other sign would arouse suspicion. But there is another sign almost invariably present. The normal baby has firm muscles; when awake he is in constant movement; and the least touch convinces the observer that the tone of the muscles is excellent. The rickety child, on the contrary, is slow to move, takes no delight in exercising his muscles, and these are found slack, soft, and slow to respond by contracting. This loss of muscle-tone is an early and characteristic sign of rickets. Pallor is not invariable, but is a common accompaniment of rickets. Yet some rickety children retain a good color and any serious degree of anemia is not a sign of rickets alone. It may be an indication of a slight degree of scurvy. The earliest changes in the bones are found in the bones of the skull. Often before there is any perceptible change in the long bones there is a softening in the lines of the sutures of the skull and the anterior fontanel remains unduly wide. With this there is a delay in the eruption of the teeth and often a malformation of these when they do appear. When any of these five symptoms is present there should be a suspicion of rickets and the diet and hygiene of the infant should be investigated and the known factors of rickets eliminated.

If this is consistently done the fear of bony deformities is dissipated, for there is no disorder which yields so promptly to the appropriate treatment as early rickets.

Pelvic Pathology and the Cardiovascular System.—Wm. Edgar Darnall (*Virginia Med. Monthly*, October, 1922) states that the degenerations of the cardiac muscle associated with suppurating neoplasms of the pelvis are analogous to the degenerations observed in any systemic bacterial invasion. The long-standing pyogenic infections of the Fallopian tubes, pelvic abscesses, degenerating ovarian cysts or fibroid tumors as well as the cachectic toxemia of cancer in these organs must eventually affect the cardiac muscle. Hyaline degeneration of its fibres results from the toxemias of these conditions just as they would from a pneumonia, an influenza or other acute infectious disease. Myocardial weakness, dilatations, chronic nephritis and arterial disease must eventually follow the one as truly as they do the other class of diseases if the pelvic pathology is allowed to continue indefinitely without relief. It is, of course, going too far to say that all cases of cardiovascular disease associated with fibroid tumors are due to the tumor, for there are other diseases and conditions that may upset the cardiovascular system. Or, indeed, the cardiovascular system may have been upset before the incidence of tumor formation. However, it must be admitted that the relationship between heart disease and myoma is of such frequency that the "myoma heart" must be recognized as a real entity.

Sacroiliac Strains.—As pointed out by E. Denegre Martin (*South. Med. Jour.*, November 2, 1922), nerve pains of sacroiliac origin are often neglected and misunderstood. The patient's trouble is frequently diagnosed as sciatic neuralgia, muscular rheumatism, etc., and various liniments, massage and drugs are given, when the causative factor is sacroiliac sprain, acute or chronic, and the essential thing is to find the cause, if possible. As to the X-ray findings it is Martin's experience that in 90 per cent. of the recent cases of sacroiliac strain they are entirely negative. The diagnosis is better made on a carefully taken history and palpation of the joint. In the chronic sacroiliac strains the X-ray can be of some assistance in showing the separation of the sacroiliac joint and probably arthritic changes, but as an aid in the diagnosis of acute sacroiliac the X-ray is of no value.

The Common Gastric Complaints of the Cardiac Patient.—Pain about the epigastric region, vomiting, diarrhea, lack of appetite, constipation, belching, fulness and flatulence are considered among the most common gastric

complaints of the cardiac patient by Thomas F. Reilly (*N. Y. State Jour. of Medicine*, December, 1922). In discussing the relationship between gastrointestinal symptoms and cardiac diseases, he further states that it is scarcely necessary to call attention to the fact that the old rule, when a patient complains of pain about his heart, one should visualize such a patient at once as more likely to be a stomach rather than a heart case.



Tuberculosis in Infancy and Childhood.—Roland G. Freeman (*Arch. of Pediat.*, August, 1922) discusses the prognosis and treatment of this condition and concludes: 1. Tuberculosis in infancy, which is localized, may often be cured by prompt interference and thorough treatment. If, however, it has involved the lungs, it rapidly becomes a generalized tuberculosis and gives an absolutely bad prognosis. 2. Tuberculosis in either infancy or early childhood, whether rapidly progressing or slow in its progress, causes comparatively little emaciation. If an infant or young child with a chronic lung condition emaciates rapidly the probability is that the condition is not tuberculous. 3. Enlarged bronchial lymph nodes, when present, may be shown with the X-ray plate if the picture is taken in a lateral oblique angle instead of in anteroposterior position. 4. Tuberculosis of the lungs in children over one or two years of age may, in many cases, be cured if prompt action is taken; if fresh air is used persistently; heliotherapy, cautiously; and rest, full nourishing and digestive diet, and cod liver oil are given. These children, if destined to do well, rapidly lose their temperature and soon gain weight, while the physical signs and the X-ray pictures of the chest will more gradually show improvement.

Management of the Tuberculous Patient.—In an instructive article on this subject, J. A. Myers (*Jour.-Lancet*, December 1, 1922) offers a number of excellent suggestions, well worthy of consideration, to wit:

1. Sanatorium treatment should be recommended strongly for all cases of active pulmonary tuberculosis. If sanatorium treatment is impossible, an attempt should be made to carry out the sanatorium routine at home.

2. Education of the patient as to the nature and treatment of the disease is one of the most important factors in treating pulmonary tuberculosis.

3. Heliotherapy is a valuable aid in treating tuberculosis, but should always be employed in conjunction with the rest treatment.

4. Artificial pneumothorax may be employed in only about 10 per cent. of the patients who apply for treatment today. When this procedure is possible it usually makes the prognosis about 50 per cent. more favorable.

5. Postural rest may be used with real benefit to the patient in a large percentage of pulmonary cases. Recovery is often hastened weeks or months when this method of treatment is carefully carried out.

6. In the treatment of pulmonary hemorrhage rest and posture are important. Narcotics in small doses are often indicated. In extreme cases one should resort to artificial pneumothorax.

Pyogenic Kidneys.—John A. Hawkins (*Urologic and Cutaneous Review*, October, 1922) has observed that patients suffering from pyelitis and pyelonephritis will show, practically always, a marked aciduria and it should at once excite suspicion. Men complain frequently of a pain in the terminal inch of the urethra. In his opinion, pyelitis at the beginning is a medical disease and is best treated by rest in bed, liquid diet, plenty of water, attention to the bowels, reduction of the urinary irritation and increasing the patient's comfort. Pelvic lavage is of value in chronic cases. Acute hematogenous renal infection is a serious disease and when severe symptoms are present it becomes a surgical condition of the greatest urgency. Pyelonephritis and purulent nephritis vary much in the form and extent of kidney destruction. They are necessarily surgical diseases and the prognosis is governed by careful examination, using the X-ray and ureteral catheter. Only that part of the kidney should be removed which shows, macroscopically, complete destruction, unless the destruction is caused by tubercle bacillus. Then the operation cannot be too radical. Conservation of the smallest portion that can functionate should be the rule as *life may be prolonged by the presence of but a small portion of one kidney, if that portion has a chance to hypertrophy before all the work is thrown on it.* There is but one indication in pyonephrosis, viz., the removal of the diseased organ. It is well to give a guarded prognosis and to make the operation an exploratory one, first securing the patient's permission to do what shall be found to be necessary.

Pregnancy Complicating Heart Disease.—Harold E. B. Pardee (*N. Y. State Jour. of Med.*, December, 1922) considers abortion to be only rarely indicated for women with heart disease. Cardiac failure is the thing to be feared in all cases, and we should be guided in our prognosis and treatment by the presence or absence of symptoms or signs of cardiac failure and by the degree of severity of these when present. The pathologic condition is of much less importance than the physiologic reactions. With proper observation and treat-

ment severe cardiac failure should not occur during pregnancy, for if medical treatment does not ward it off, then interference is indicated. Even during labor its occurrence should be rare with careful observation and prompt intervention as described whenever severe failure seems imminent. Operation should not be withheld at any stage, even tho the signs of failure are slight, if they are seen to be growing progressively worse under proper medical treatment. It is better to operate when the failure is moderate than to have to do so when it is severe. By such coordination of medical and surgical treatment it will be possible to obtain more live babies and to have fewer maternal deaths than any of the figures which have so far been published. In Pardee's series the maternal mortality of the serious group was 26 per cent. and of all cases 10 per cent. He feels that this is unnecessarily large and should be capable of reduction by more than half.

Avoidance of Shock in Treatment of Diffuse Peritonitis.—From a thoro study of this subject, A. Murat Willis (*Southern Med. and Surg.*, November, 1922) is led to assert that many cases of traumatic shock are due to the entrance into the circulation of toxic materials caused by protein cleavage, such as histamin. From a practical standpoint, it has been shown clinically and experimentally that striking benefit may be obtained by the prevention of the entrance of these toxic agents into the circulation, either by removal of the dead tissue or by clamping the vessels leading from the traumatized area. If this view be accepted, it would seem that even more pronounced effects would follow the decomposition of a nitrogenous fluid teeming with proteolytic bacteria in a cavity with such powers of absorption as the peritoneum. For this reason he considers it important in the avoidance of shock in operations on cases of diffuse peritonitis to associate irrigation with gentle separation of adhesions, emptying of pus pockets and flooding of the peritoneal cavity with warm saline. Simultaneously, by means of an electric suction apparatus, the diluted exudate is removed as completely as possible. This procedure is comparable to a débridement and far superior to mere drainage.

Intestinal Infections and Toxemias and Their Biologic Treatment.—N. Philip Norman and Andrew A. Eggston (*N. Y. Med. Jour.*, December 6, 1922) state that in the evolution of their work they have increasingly tended to favor the bacillus acidophilus and the colon bacillus. The following summary embodies their therapeutic ideas:

The treatment of intestinal infections is predicated upon five salient factors: 1, The removal of foci of infection from the upper digestive and respiratory tract; 2, the efficient, non-surgical mechanical drainage of the colon; 3, sufficient doses of pure cultures of viable

strains of bacillus acidophilus; 4, the maintenance of a protective intestinal flora by diet; 5, autogenous vaccines in selected cases. This routine seems to offer a direct avenue of approach not alone for diagnostic purposes, but also for therapeutic purposes in many diseases of obscure etiology.

Chronic Infectious Arthritis.—This condition, also termed Still's disease, has been the subject of a careful study by S. D. Foster (*Ohio State Jour. of Med.*, August, 1922). His views are formulated in the following conclusions: 1. The different classes of the arthritides come under the same pathologic family tree. 2. Many research workers now classify the arthritides under endocrinopathies. 3. The pathology varies and we may have both proliferative and degenerative changes in the same case. 4. Joint ankylosis may be true or false. 5. Most cases are first diagnosed as rheumatics. 6. Many cases improve when infectious foci are removed. 7. Arthritis must be differentiated from rheumatism, tuberculosis and gonorrhea. 8. Treatment consists in the removal of causative factors, together with the use of heat, light, massage, good diet and rest by means of protecting casts.

Surgery in Infantile Paralysis.—With regard to the surgical treatment of the residual paralysis following poliomyelitis, Henderson states in *Minnesota Medicine* (December, 1922) that only about 25 per cent. of such patients can be helped by surgical procedures. As a rule, manipulations precede tenotomies, and manipulations with tenotomies, osteotomies, the last named being resorted to only for correction of skeletal deformities. Arthrodeses are occasionally indicated, but should be performed only after a careful consideration of the power left so that the patient may use the fixed point to advantage. Lastly, but by no means least, the social status and the habits of the patient are to be seriously considered. Plastic operations on tendons are useful, but are applicable in only a small percentage of cases.

Intravenous Medication.—In a review of the subject of intravenous medication in *International Clinics*, 27th Series, C. Eggleston enumerates the following advantages: 1. Intravenous injection eliminates the factors of absorption and possible destruction or alteration in the tissues. 2. The dose, therefore, may be gauged with greater precision. 3. The actions of some drugs can be secured almost immediately when given intravenously, and it is therefore valuable in certain emergencies (threatened death from heart failure). 4. By intravenous injection valuable actions may be secured which cannot be obtained by other methods, or which can be secured to a limited degree only. 5.

Certain drugs which cannot be given satisfactorily by other methods may be administered intravenously (salvarsan). 6. Under certain conditions of diseases it may be the only method yielding the desired results with any measure of certainty.

Cholecystitis: Its Relation to Infection of the Liver and Pancreas.—W. Howard Barber (*N. Y. State Jour. of Med.*, December 1, 1922) presents the conclusions arrived at from a comparative study of a hospital series of gall-bladder cases, from a series of intentionally produced cholecystitis in animals, and from a review of the literature, that hepatitis is very often associated with cholecystitis, and that the infection travels by way of the portal blood, that the liver receives bacteria from the portal field in health and disease, that infection leaves the liver by way of the lymphatics and gives rise to pancreatic lymphangitis relatively often, and that infection is carried thru the lumen of the bile ducts relatively infrequently. From a practical surgical point of view, it is suggested (1) that cholecystitis, once, be regarded as cholecystitis, always, in that latent infection remains within the bladder wall, (2) that cholecystectomy be the operation of choice when the diagnosis of cholecystitis is made (in the absence of definite contraindications), (3) that drainage, preferably thru the cystic duct, be instituted at once in proper cases, (4) and that absorbable ties (chromicized gut) be used for the cystic stump to facilitate spontaneous drainage for relief of excessive intraduct pressure.

A Portion of Dog's Aorta to Replace Human Urethra.—Vander Veer and Heslin report in the *Urologic and Cutaneous Review* (December, 1922) a successful case of transplantation of a portion of dog's aorta to take the place of the perineal portion of a human urethra. The patient was a man, aged 30, whose urethra had been destroyed by an accident.

Lichen Planus Induced by Cupping.—Burnier, as reported in the *Urologic and Cutaneous Review* (December, 1922), describes the case of a man, 50 years of age, with no history of a previous similar eruption, who presented himself with typical annular lichen planus lesions at sites where cupping had been performed. There was a concomitant lichen planus eruption in the oral mucosa.

Tetrachloride of Carbon in Erysipelas.—Goubeau and Kieffer (*Journ. de Med. et de Chir. prat.*, August 10, 1922) recommend, for the treatment of erysipelas, the swabbing of the affected area night and morning with—

Iodine 3 g.

Carbon tetrachloride (pure)....100 c.c.

This mixture can be applied for several days running; it is neither irritating nor inflammatory; inhalation of its vapor should be avoided.



A Special Message to the Readers of American Medicine From the Local Committee of the A. M. A.—California invites you to attend the American Medical Association Convention in San Francisco, June 25 to June 29, 1923. You are also invited, with your families and friends, to attend the California State Medical Association meeting in the same city the Friday and Saturday before the American Medical Association holds its Convention. Some five or six other National and District Medical Associations will meet in San Francisco between June 21 and June 30. These include the American Society of Tropical Medicine, the Radiological Society of America, the American Radium Society, and a number of others.

Members of the New York Medical Association, in particular, are urged to attend the Convention and to spend their vacation in California. Thru contacts with various financial, civic, tourist and automobile agencies we are prepared upon request to assist you in planning your trip, in making you comfortable while at the Convention, in arranging side trips of any length or character, and in any other way acting as your host while in our State.

We are now making arrangements for a number of automobile caravans from eastern points to San Francisco. From early information it seems that this is going to be a popular method of crossing the continent. If you and your friends desire to come by automobile, communicate with us and we will assist you from the moment you leave home until you get back. If you plan to come in any other way, write to us and we will be glad to help you with your arrangements. You are requested to write to Dr. W. E. Musgrave, 806-809 Balboa Bldg., San Francisco, for any information of whatever character about this Convention, or about vacation opportunities anywhere in California.

Committee on Prize Essays.—The Committee on Prize Essays takes pleasure in once more drawing the attention of the members of the Medical Society of the State of New York to the Merrit H. Cash Prize and the Lucien Howe Prize, which will be open for competition at the next annual meeting of the State Society, which will be held in New York City on May 21, 1923.

The Lucien Howe Prize will be awarded for the best original contribution to the knowledge of surgery, preferably ophthalmology, and is not limited to the members of the State Society, any physician being at liberty to compete for it.

The Merrit H. Cash Prize will be awarded for the best original essay on medical or surgical subjects and is only open to members of the Medical Society of the State of New York.

The essay shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope, having on the outside the same motto or device, and containing the name and address of the writer. Essays must be sent to the chairman of the Committee, Dr. Edward D. Fisher, 46 East 52nd St., New York, not later than the first of April, 1923.

EDWARD D. FISHER, M. D., New York,
LUCIEN HOWE, M. D., Buffalo,
CHARLES G. STOCKTON, M. D., Buffalo.

Transportation to San Francisco Next June.—The American Medical Association will hold its next annual session in San Francisco, June 25 to 29, 1923. Dr. Wendell C. Phillips, of 40 West 47th St., New York, one of the trustees, is organizing a committee from the Eastern States to arrange for transportation to and from that meeting. He will be glad of the views of the Fellows of the Medical Societies as to the sort of tours that would find most favor.

Cause of Death of Presidents.—The following may be of some interest to physicians, states a writer in the *Eclectic Medical Journal* (December, 1922). It will be noted that at the time Jackson and Pierce died dropsy was regarded as a disease. Now it is known to be but a symptom of some other disease. The account is taken from an old issue of the *Medical Counselor*:

Washington's death was due to acute laryngitis; Adams, Madison and Monroe, practically to old age; Jefferson, chronic diarrhea; John Quincy Adams, paralysis; Jackson, dropsy; Van Buren, catarrhal affections of the throat and lungs; William Henry Harrison, pleurisy; Tyler, cause of death not given by biographers; Polk, cholera; Taylor, cholera morbus, combined with a severe cold; Fillmore, paralysis; Pierce, dropsy; Buchanan, rheumatic gout; Lincoln, Garfield and McKinley, assassinated; Johnson, paralysis; Grant, cancer at the root of the tongue; Hayes, neuralgia of the heart; Arthur, heart trouble; and Benjamin Harrison, pneumonia.

The A. M. A. Health Journal, for the benefit of the laity, long contemplated and prayerfully hoped for, is about to eventuate. The Board of Trustees announced to the State Secretaries in conference assembled in Chicago, November 17, that the project had been fully provided for, and that the first issue would appear April 1, 1923. It is to be known as *Hygeia: A Journal of Individual and Community Health*, and will be of such character as to appeal to the lay

public and to sell on the news stands in competition with other publications presuming to be of like nature. The Council on Health and Public Instruction will constitute the editorial board of the new publication, with Chairman Dr. Victor C. Vaughan in charge. Dr. Vaughan will for the time be on duty at A. M. A. headquarters. The contents, as outlined by Dr. Vaughan, will be most attractive, indeed.

Benjamin Franklin as a Medical Contributor.

—It appears, according to the *Journal of the Florida Medical Association*, that in Franklin's day there was little or no medical literature in America; that in 1785 he invented bifocal lenses and a flexible catheter, and contributed to the treatment of nervous diseases by electricity. He wrote on deafness, gout, sleep, lead poisoning, heat in the blood, infection from dead bodies, death rate in infants, and medical education. He wrote a history of the Pennsylvania Hospital, of which he was the principal founder (1751). He also wrote a pamphlet on inoculation in smallpox.

Price of Radium Drops.—It is announced by the United States Geological Survey, Washington, D. C., that the price of radium has decreased owing to the discovery of vast quantities of radium-bearing ores in Africa, which are easily worked at a much lower cost than the American mines. This caused a drop from \$120,000 a gram to \$70,000, which is the lowest price at any time since radium has been used. In connection with Cancer Week, the Survey announced, the State of New York and the city of Philadelphia have each bought 2 grams for the use of their citizens, and the city of Quebec, Canada, 1 gram.

Variola Again Spreads in New York State.—A threatening outbreak of smallpox on the St. Regis Indian Reservation which began early last month has only been checked, reports the *New York Medical Week*, by a wholesale campaign of vaccination directed by the State Department of Health. In spite of all efforts, however, the infection has spread to other communities in northern New York, and it will indeed be fortunate if the next few months do not bring a considerable increase in the number of cases. Within the last few weeks a dozen cases in western New York have been traced to a source in Ohio. Altogether 146 cases of the disease have been reported in New York State, outside of New York City, since the first of January of this year. With repeated local outbreaks and constant danger of infection being brought across the border lines, the State Commissioner of Health, Dr. Hermann M. Biggs, considers the situation sufficiently serious again to urge upon the public the importance of vaccination, and the Department is preparing special posters to be put up in railroad stations and public places throughout the State.

American Medicine

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In Advance

The Index of Nutrition.—Efforts to establish a dependable index in nutrition have given rise to various working formulae, one or two of which at present are receiving more than slavish devotion from groups who believe that weight, or height, or both, represent an absolute index of nutrition. In *Public Health Report*, January 12, 1923, Clark, Sydenstricker and Collins present an interesting study on "Weight and Height as an Index of Nutrition," based upon an examination and measurement of approximately ten thousand children.

They call attention to the fact that the most popular index of nutrition now used is the weight of a given child compared with the average weight of children of the same height, age and sex, allowing ten per cent. deviation from the standard as a normal variation. It is common practice to designate children below this standard as underweight, and presumably as not physically fit. The result of their investigation shows that, regardless of the relative advantages of this standard, "a deviation in weight in the case of a specific individual may not necessarily indicate an actual deviation from good health."

In their investigation, all children were first given a physical examination and graded according to nutrition as "excellent," "good," "fair," and "poor," on the basis of the clinical evidence. While height and

weight naturally came under consideration, they merely served as single factors in arriving at a diagnosis of the state of nutrition. For purposes of simplification, and in order to have adequate sized groups for comparison, the "excellent" and "good" were considered as one and the "fair" and "poor" as a second group, making the two practically nutrition satisfactory and unsatisfactory.

While children in the unsatisfactory group weigh less on the average than those in the satisfactory group, a considerable proportion of the children in the well-nourished group weighed less than some in the "fair" and "poor" group, and a considerable proportion weighed less than the average weight of children of this unsatisfactory group. This would serve to indicate that weight examinations alone are insufficient for determining the state of nutrition and the physical examination is, therefore, necessary to detect a reasonable number of the children with malnutrition. Its tendency is to be slightly lower in the "fair" or "poor" nutrition group. When the sex element is considered, there is definite overlapping between the mode of weights in the better nourished group and the poorly nourished group. Some of the "excellent" and many of the "good" group are as much under the average weight as some of the "poor" group.

Consideration of Weight Alone not Sufficient.

ficient.—It would appear to be quite definite that the consideration of weight alone as referable to height, age and sex is not adequate for diagnosing the degree of nutrition of individual children, if the nutritional status is to be regarded for purposes of accurate discrimination. The constant use of it alone would class as undernourished some children who would be judged well nourished as a result of physical examination, and it would also fail to detect some children who are actually poorly nourished, but whose weight reaches the average.

In brief, "the fact that an individual child weighs less or more than the average is not conclusive proof that he is undernourished or overnourished."

The study points out quite clearly that a larger percentage of girls than boys are underweight, and that at all ages, except seven and nine years, the percentage of girls who are overweight is greater than the percentage of boys who are overweight.

The ten per cent. variation below Wood's standard weights, the one most commonly applied in school health work, does not take into consideration this difference in the relative variation for various ages and for the two sexes. The result is that during the ages of greatest relative variation, a higher percentage of children fall below the ten per cent. limit. This fact must be recognized, because it probably constitutes a matter of normal variation rather than an expression of an unusually large amount of malnutrition among girls. It was found that four per cent. of the "excellent" nutrition group were more than ten per cent. underweight, according to Wood's standard, and while none of the "poor" nutrition group were underweight, forty per cent. of them were within the ten per cent. limit

of variation.

It is evident that if average weight is to be used as an index of nutrition, it is to be recognized merely as an approximating rough index, serving more to point out the average of a large group of individuals rather than constituting a safe and decisive guide for determining the nutrition of individual children. The constant variation of seven or ten per cent. serves to complicate the situation and is not to be relied upon as an evidence of the healthful limits of normal variations. To create tables of malnutrition of school children on the basis of a weight schedule is to build up an inaccurate series of allegations. The only certain and reliable index of nutrition, as applied to individuals, results from a complete physical examination by the physician. Physical measurements by laymen who are following cut and dried tables, may, on the one hand, create a false feeling of security and, on the other hand, an unnecessary fear and anxiety concerning the state of nutrition of individual children. The element of variability dependent upon sex, racial stock and specific rates of growth, merits consideration in determining what part height and weight play in arriving at a decision as to the nutritional status of individual children.

The general physical condition of the individual child is, after all, the safest index of its actual nutrition, considering this to be more than number of pounds per inch of height.

Focal Infections and Psychoses.—The influence of focal infections upon the origin and cause of functional psychoses can only be determined by carefully controlled studies and a social oversight of patients discharged from institutions as cured.

It is interesting to note in the *American Journal of Psychiatry* of October, 1922, the widely variant opinions expressed by Cotton, who apparently can see nothing else but focal infections, and Kopeloff and Cheney, who, as the result of a controlled experiment, report: "One recovery has taken place that was not prognosticated before any focal treatment was employed. We have no evidence upon which to base the conclusion that the removal of the focal infection itself has brought about the recovery."

The two points of view are diametrically opposed. There is no difference of opinion upon the necessity of removing diseased teeth, tonsils, or other organs diseased and accessible. One group is endeavoring to view focal infections in relation to the entire physical status of the patient, while the other is concentrating upon focal infections and disregarding all other elements. Dr. Cotton apparently assumes the attitude that the medical profession must take his views on the "all or none" principle. Accepting his ideas *in toto* involves casting out all the advantages that may be bound up in other theories of the origin of the psychoses. The principle of the "panacea" is usually unsafe in medicine.

The difficulty of establishing the actual existence of focal infections, as for example in the colon, is recognized. To remove the colon is attended with a high degree of mortality and there is a serious question as to whether the practice is warranted in the light of our present-day knowledge concerning the influence an actual colonic infection may have upon the mental processes, irrespective of the alleged influences upon them.

The tendency to extremism either is

productive of, or a result from, a degree of mental arrogance, which does not win sympathizers for the proponent of a theory. The results of Dr. Cotton, as reported, are excellent, but until his findings are corroborated and win the support of psychiatrists on the basis of carefully scrutinized investigations, even his results are not to be accepted at face value, particularly in view of the fact that an adequate time has not passed to enable one to express a final judgment upon his own reported cures.

It is unfortunate that Dr. Cotton has not entered into a scientifically controlled experiment. Granting all credit to him for his emphasis upon the necessity of controlling focal infections, it does not appear that he is justified in excluding other elements in causation. Nor is it warrantable to reject as worthless all other points of view, merely because of a dominant opinion, which appears to be worth holding on to, even if it should prove to be invalid as the basis of a single type of causation for the functional psychoses. Open-mindedness in matters of this kind is of the utmost importance—the closed mind is unapproachable. The demand that all others accept one man's opinion, merely because he utters it, is far from scientific. To condemn, criticize or, by innuendo, abuse those who frankly ask for more convincing proof, who question technic, who inquire as to the degree of certainty as a result of follow-up work, is hardly justifiable. A newly propounded theory constitutes a challenge and when it is taken up, those challenging should be met in the scientific arena, with carefully developed data as the essential weapons of combat.

The exact status of focal infections as related to functional psychoses is still a problem, and while this relation is *sub*

judice, students, clinicians and laboratory workers will be searching for the truth. It will take a few more years to determine the actual end-results of the treatments given at the Trenton institution, where Dr. Cotton is carrying on his valuable studies, and equally long for those who are testing out the verity of his theories. It would be the height of folly, however, during this interval, to cast out all other theories save the one concerning which a more final judgment is sought.

Focal infections have been held responsible for so much that it is time to face causative influences in a thoughtful, scientific and critical manner, that the question may be answered with a reasonable degree of unanimity on the part of those competent to evaluate the entire subject. Meanwhile, it is not conservative or ultra-skeptical to say that focal infections may be a factor, but they probably are not to be regarded as the only cause of the functional psychoses.

Physical Examination and Training.—

In the *Twenty-fourth Annual Report of the New York City Superintendent of Schools*, the section devoted to the activities of "The Physical Training Department" commands attention. There is evident appreciation of the necessity for wise and generous provision for playgrounds, gymnasiums, swimming pools, medical inspection and physical training, together with the teaching of hygiene, as factors in promoting the health and welfare of the school children.

The extent to which progress in correcting physical handicaps has been successful in elementary schools may be judged by a study of the children who enter into high

school. Studies in two high schools to ascertain the varieties of remedial defects in first-year pupils showed that practically thirty per cent. of the number examined still possessed handicaps capable of being removed. A second study of the senior classes in high schools involved examination of 24,500 children and indicates there is a striking necessity for some improvement in the acceptance of physical hygiene by school children, as, in the senior year, there were still 1,400 children whose teeth had not been treated, 1,113 whose visual defects had been detected, but were still untreated, 701 children with hypertrophied tonsils requiring removal, and approximately ten per cent. of the children with flat feet meriting attention.

Considering that but a small proportion of school children pass thru the high schools, it is obvious that the most effective follow-up work for the correction of physical deficiencies and handicaps is required in the elementary schools. Certainly there should be comparatively few children entering into the junior high schools from the lower schools, without having had an opportunity for increasing their educability thru the relief of strains incident to physical defects. It is a challenge to realize that considerable numbers of pupils are being graduated from elementary and junior high schools with uncorrected remedial physical disabilities.

When one considers that continuity of education is the privilege of a small proportion of our population, one hesitates to conjecture concerning the number of children who leave schools to enter industry without obtaining all the essential physical care that communities can offer. It is unfortunate that children are obliged to leave school early for various reasons, and this

reason itself increases the responsibility of the community for increasing their vital resources to the maximum thru the removing of all physical obstacles to a high degree of efficiency.

The detection and correction of physical defects is the major purpose of the medical inspection of schools, as at present practiced, and whether this function resides in the Department of Health or the Department of Education, the values to the community are potentially the same. To permit large numbers of children to escape the real benefits of medical inspection is to permit the wastage of public funds. The work of correction is not of value merely thru the detection of a large variety of physical shortcomings, nor does this statistical tabulation, however impressive, bring any return to the community. Medical inspection and examination are complete only when they reveal the fact that the earlier detected physical handicaps have received the necessary treatment that has resulted in their disappearance or alleviation.

The follow-up part of medical inspection is of vital importance. Physical training involves not merely the development of muscles, alertness, suppleness, quick responses to commands, together with the involved increase in circulatory and respiratory powers, but should include the principle of restoring the physique to its highest degree of effectiveness.

The inculcation of health habits is by no means simple, and the fact that twenty per cent. of senior high school children are reported to fail in the assumption of the habitually correct posture indicates a marked weakness in the scheme for educating children in correct habits of standing and sitting.

There is little doubt that far more effective physical training is secured for the deaf, the blind and the crippled than for ordinary children whose deficiencies do not penalize them so grossly as to make them stand out as specific educational problems. No one would deny the value of the efforts that are bestowed upon these handicapped school children, but there is every reason to believe that a similar degree of intensive application of the principle of physical training to average children would bring about a higher per capita gain in health habits, and that the community would be strengthened considerably thru the influx to its active serving population of a finer type of young citizens, trained in the correct manner of living safely, healthfully and efficiently.

There is considerable difference between exposing children to educational books, posters, pamphlets and inculcating in them a desire to live in acceptance with the rules of health. Habits of hygiene must become, first of all, habits, and the psychologic bases for inculcating habits merit more consideration on the part of those to whom it is granted to wield the educational power. Habits of hygiene require no particular panoply of display, nor unique circus-like manifestations for the holding of interest, any more than does the teaching of any other part of the world's work. The striking evidence of the lack of adequate efficiency of our medical inspection and follow-up work is highly suggestive of the need for greater consideration for the principles involved in the teaching of health habits and hygienic living.

The Decrease in Tuberculosis.—The fall in the tuberculosis death rate has been

exceedingly gradual and was already under way even before Koch's discovery of the tubercle bacillus. The reduction has varied with different nations. There is ample evidence to indicate that the proportion of its decline has been commensurate with the prosperity, intelligence and desires of individual countries or communities that have faced the problem. In the *American Review of Tuberculosis*, June, 1922, Haven Emerson draws attention to the factors facilitating the rapidly increasing fall of the tuberculosis death rate during the last five years. He points out that where education and community organization to prevent tuberculosis have been thorough, and where the conditions of housing, industry and economic independence have been favorable, the death rate, from all forms of tuberculosis, has fallen more rapidly than it has elsewhere. This condition applies more particularly to the United States, Great Britain and Germany. In France, the tuberculosis death rate was high and fairly consistent from 1891 to the outbreak of the war.

In Paris, itself, from 1887 to 1890, the death rate per one thousand population was four hundred and thirty-seven, which had fallen to three hundred and twenty-eight in 1914. During the period of the war these figures were somewhat decreased, largely due to deaths in military service, even tho tuberculosis may have been the actual cause.

In the past fifty years the tuberculosis death rate has fallen seventy-seven and nine-tenths per cent., and in the past eleven years it has fallen fifty-one per cent. in New York City.

The elements entering into the decline of the tuberculosis death rate are threefold: "(1) Those intentionally directed as specific

measures against the distribution of the tubercle bacillus from the diseased to the well; (2) those that are accessory and tend to affect the general bodily resistance of those particularly exposed or susceptible, or are intended to inform the public, so that intelligent self-protection may become more general; and (3) those events, social, economic, and so far as the anti-tuberculosis campaign are concerned, quite accidental, in which we may see an unsought, unplanned and, to many, an unexpected bearing upon tuberculosis."

An enumeration of the details that have entered into the decrease of tuberculosis serves excellently well to point out the type of service, public and private, which is essential to decrease still further the unnecessarily high mortality from this disease. Among the specific measures which have been more or less generally adopted by the public health services in most states of this country, one may include "(1) the early and accurate diagnosis of tuberculosis, particularly the pulmonary form, at special public dispensaries, as well as by private physicians; (2) bacteriologic examination of the sputum; (3) notification of tuberculosis as a communicable disease; (4) the effort to segregate patients with tubercle bacilli in the sputum, to lessen dissemination, and the increased attention given to sanatorium treatment; (5) home nursing service for the education of families in which tuberculous patients are under the care of a private physician or dispensary, with a view to increasing the resistance of the non-infected members of the family, and to facilitate the adequate care of the exposed members, so that they may not be an active source of familial danger.

Emerson calls attention to the interesting fact that New York City, as a community,

has been taught to respond to the suggestion of nurses that actual diagnosis is desirable, and points out that in New York City in 1921, sixty-six per cent. of those applying at tuberculosis clinics were found to be non-tuberculous.

(6) Enforcement of laws and ordinances to reduce the habit of spitting in public places; (7) the enforcement of laws and ordinances forbidding the common use of such articles as drinking cups, eating utensils, towels, etc.; (8) the compulsory pasteurization of milk and milk products, except such as come from herds or cows proved to be free from tuberculosis; (9) exclusion of parts or all of carcasses of animals slaughtered for food purposes in which gross tuberculous lesions are found before or after slaughtering, even tho this element has not been an important one in causing the reduction in human tuberculosis; (10) the examination and exclusion of tuberculous food handlers; (11) the control of flies in homes, hospital or sanatoria, and where food is prepared or served.

Among the accessory factors, special stress must be placed upon (1) reduction in infant mortality, and encouragement in breast feeding, except where the mother is tuberculous; (2) nutritional protection and assistance for children during the pre-school age, and in general for all children during the period of school control; (3) the increase of open-air classes for anemic, undernourished and pre-tuberculous children; (4) the anti-tuberculosis campaign in the principles underlying the natural laws upon which growth, development and vigorous maturity depend; (5) housing reforms, which seek to control the number of persons occupying premises, rooms or apartments, for residential purposes, and the regulation of the extent and character

of gainful occupations in the home; (6) the regulation of industry, so as to secure the elimination of those conditions which have been shown to contribute by mechanical or chemical injury to the respiratory tract to the development of tuberculosis among industrial workers.

The accidental factors are those which have proved to be social and economic events of a character to cause a reduction of the disease, even tho they were not developed, with the object of reducing tuberculosis. Among these are to be included (1) racial changes in the population, due to the unrestricted immigration of the Jewish people, especially from Germany, Russia and Poland, up to 1914, and the limitation of all immigration since that date and more particularly since 1917; (2) the war service, which placed under favorable conditions of hygiene and nutrition many men of twenty-one to thirty-one, who had never had the benefit of such care; (3) the expansion of industry, with higher wages, shorter hours, more continuous employment, with resulting increase in expenditures for housing, food and clothing; (4) limited prohibition, which became more general in 1920; (5) influenza, during 1918-19, which caused the death of many persons before the determination of an existent tuberculosis; (6) the particularly favorable climatic conditions which prevailed in a large area of the Atlantic seaboard during the fall, winter and spring of 1920-21.

The Role of Twenty-three Factors.— These twenty-three factors have combined to safeguard the American public against tuberculosis. It is striking to note that the death rate in Massachusetts has decreased from 361 per thousand in 1872

to 97 in 1920; in New York City, from 408 in 1872 to 89 in 1921. Far more significant is the result of the intensive effort to control tuberculosis in Framingham, Mass., which reduced the death rate from this cause from 145 in 1911 to 40 in 1921. The low figure of this community represents at least part of the hope and promise of the future. Many of the factors contributing to reduction have scarcely been developed adequately to manifest their full influence.

Some of the specific factors have not been completely applied thruout the United States. Numerous accessory factors are not fully appreciated in their close relation to the tuberculosis problem, particularly those phases which deal with economics or industries. The industrial phases of tuberculosis control are slowly acquiring force and more general appreciation. When these phases of tuberculosis control are more widely adopted, and when prohibition itself shall have had a longer period of time to demonstrate its effects upon raising the standards of national vitality, there will undoubtedly be a still further demonstration of the program for control of tuberculosis.

It may be said that with the exception of some of the specific factors all the elements which lead to the control of tuberculous infection also promote general welfare and healthful conditions. Hence, the decrease in the tuberculosis death rate partially parallels a decrease in the general mortality rate, even tho the fall in tuberculosis is somewhat more rapid than the decline in deaths from all other diseases. This is a natural phenomenon, as the death rate of any single disease, particularly acted upon by a hygienic element, would show a greater response in many other diseases in

which the same elements are less effective.

In conservative prophetic language, Emerson states: "It is probably not too much to say that in the next twenty-five years as great a percentage of reduction in tuberculosis can be attained as has been accomplished in the past fifty years, by adding to our methods and resources those which will build up bodily resistance by providing for and following a higher standard of living, and those which will diminish the hazards of occupation and of occupancy."

Higher Education for Girls.—The increase of higher education for women carried with it a tremendous increase in the number of girls having the advantages of secondary education. There has been a tendency to develop the curricula of girls' high schools on the same plane as that utilized for boys. Numerous questions have arisen as to the wisdom of this procedure.

In the program for the extension of higher education among women, the assumption of equality carried with it the idea that the educational progress should be secured by means of studying identical material. While originally there was more than a lurking suspicion that women belonged to a so-called "weaker sex," the current of opinion sped on to the opposite extreme of complete equality, regardless of anatomical differences. Equality of opportunity does not necessarily mean identity of educational materials. There is every reason to believe that there is the need for a differentiation in the curricula of boys' and girls' high schools, in such a manner as to afford each sex full opportunity for the development of its own peculiar physical and mental potentials. This does not

mean that it is necessary to establish entirely different curricula for the two sexes. There is a vast amount of educational material of equal usefulness for the mental development of boys and girls in secondary schools. There is, however, an untouched variety of subjects which would be particularly useful for bringing out the innate powers of boys and girls in a manner superior to that possible with the curricula subjects at present employed.

It is patent that the physiologic differences between the sexes are such as to present normal variations. Secondary school education at present is too formally organized, tho there are many evidences of tendencies to break down the rigidity which has been the practice, and to establish a wider range of studies for secondary education.

In the field of physical education, particularly, there is reason for differentiation. The ordinary duties and responsibilities of girls far exceed the demands of boys and there is a greater strain upon their physical and nervous systems, incident to the daily home routine, supplemented by extra curricula studies, which find less evidence in the lives of boys. Opportunity for play and games is highly desirable, but there is a question as to the advantage to be derived from compulsory physical training for girls, other than that represented in the ordinary setting-up exercises.

There is ample evidence that tendencies to idleness of a protective character are most common among boys and they are more likely to escape the disadvantages of overpressure. Girls are more obedient and more industrious, and indicate a higher degree of fatigability.

There is no desire to open any question as to the comparative mental capacity of

the two sexes, as this is largely a matter for educational authorities, but there is every reason for physicians to be interested in those phases of secondary school education which involve unnecessary physical fatigue or conduce to nervous overstrain. There is ample reason to believe that a survey of girls' schools in this country would be of advantage, in order to base education upon ascertained facts concerning the comparative health, fatigability, susceptibility to nervousness, and the reasons for school failures. The comparative figures for physical handicaps are of but little value in connection with higher education, inasmuch as the college women represent a highly selected group, even far more selected than the group in men's colleges.

New data should be sought on the basis of studying the colleges themselves, with a view to determining existent facts in relation to the welfare of college women.

Too long has the idea been rife that women's colleges should lack practical subjects and should devote themselves largely to the old type of classical education, which originally had a so-called cultural value that today is not receiving the same degree of homage that it did a generation ago. The education of women as well as of men should have a practical social outlook, with a view to promoting the individual welfare of students and the social advantages of the communities to which they are to return.

The Prevention of Goiter.—The prevention of simple or endemic goiter has rapidly approached a plane of simplicity and efficiency. There is no means of determining the harmful effects goiter has exhibited during the past. The existence of

endemic goiter districts, in sections of various countries removed from the sea-coast, has called attention to its widespread distribution. In all continents these centers are well known. In some sections not merely human beings, but domestic animals are afflicted. In Pemberton Meadows, British Columbia, young animals such as calves, lambs and pigs were so afflicted that it was difficult to raise them, but since 1918 goiter of animals has been practically controlled.

O. P. Kendall, in the *American Journal of Public Health*, February, 1923, calls attention to the fact that iodine has been empirically used for the treatment of goiter since 1820, altho the crystalline iodine compound was not finally isolated until 1916, by Kendall. It is now fully accepted that iodine is necessary for normal thyroid function and that the percentage of iodine present in individual thyroids is variable, altho a quite constant minimum percentage is requisite for the maintenance of normal gland structure. If the iodine content falls below 0.1 per cent., active hyperplasia begins.

Marine has stated: "Simple goiter is the easiest known disease to prevent." Scientific experiment has demonstrated the truth of this statement, particularly in the control of the development of goiter at the time of adolescence. The work of goiter prevention as a public health measure was begun in 1916 by Marine and Kimball. The method of prevention was the administration of three grains of sodium iodide in the drinking water of school girls once each day for two weeks, each spring and fall. At the first examination, 56 per cent. of the girls were found to have enlarged thyroids in the Akron schools from the fifth to the twelfth grades. At first the administration

of the preventive draught was elective. Of the girls who took the prophylactic dose of iodine, not a single normal girl developed thyroid enlargement. Among the girls not taking the iodine as a preventive, 27.6 per cent. of those without goiter in the beginning developed goiter. Furthermore, the goiters disappeared in over 60 per cent. of the girls who had had goiter in the beginning, and who took the prophylactic iodine, while among the girls who had had goiter and did not take any iodine, the enlargement disappeared in very few instances.

This significant American experiment is corroborated in the most startling manner by the experiments in Switzerland. In 1918, under Professor Klinger, the work was begun in the schools of Zurich, in some of which one hundred per cent. of the children were goiterous. Because both boys and girls were afflicted, the prophylactic treatment was administered thruout the school. A few milligrams of iodine in the form of an organic iodine were administered weekly thruout the year.

The report of the experiment covered a period of three years and are now available with more striking results than were obtained in the United States. A recent report of the Health Commission of the Canton of St. Gallen, states that the incidence of goiter among all the children of the Canton of St. Gallen, January, 1918, was 87.6 per cent., and in January, 1922, 13.1 per cent. This reduction gives truly remarkable evidence, and it is thoroly understandable why the Goiter Commission of Switzerland last spring recommended that this method of goiter prevention be instituted as a public health measure thruout the entire state.

There is ample testimony that the dosage of iodine which has been employed is free from possibility of harm. The Switzerland experiment did not result in a single case of iodine rash, nor did exophthalmic goiter occur among any of those who took the prophylactic dose.

In the face of evidence of this type, it is patent that an organized plan for saturating the thyroid gland of adolescents from the ages of eleven to sixteen years probably would result in the prevention of the development of goiter. In many sections of the country enlarged thyroids are not frequent, tho it is probable that careful study would reveal a far greater incidence than has hitherto been suspected. In those sections of the country where thyroid hyperplasia is common, this method of prevention should be utilized in the public schools as a routine public health procedure, under the general direction of the Departments of Health or Education, dependent upon which Bureau is responsible for medical inspection.

In sections of the country where simple goiter is not endemic, family physicians should take cognizance of the valuable method of treatment which is available for overcoming the thyroid enlargement, or preventing its adolescent occurrence.

Inasmuch as thyroid enlargement is also common during pregnancy, and as a result there may be a thyroid deficiency possibly in the new-born, there is every advantage in providing a type of dietary for the pregnant woman that is rich in iodine, or in supplementing the dietary by the administration of iodine as a protective measure.

No measure of disease prevention has been more firmly established in so short a period of time. It will take considerable degree of education upon the subject, in

order to insure its application upon a large scale, such as is requisite in goiterous districts or in general practice. It is important, however, that this phase of public health work receive adequate attention at the hands of public health administrators and that there be the proper facilities for adopting the procedure as a general plan for protecting the health and welfare of children in our public school systems.

The Clinical Diagnosis of Diphtheria.—

Dependence upon diagnostic throat cultures for the determination of diphtheria has undoubtedly decreased the confidence of physicians in the certainty of their clinical judgments. As again pointed out by Bullowa, Hardman and Litchfield, *Journal of the American Medical Association*, January 27, 1923, "The presence of diphtheria organisms in the throat is not synonymous with diphtheria, and failure to find diphtheria organisms in culture tubes inoculated from swabs passed over the mucous membranes does not exclude the presence of diphtheria."

Positive diphtheria cultures may be secured from throats of individuals who, as diphtheria carriers, are themselves free from diphtheria. It is estimated that approximately fifteen per cent. of children in large cities are immune carriers of diphtheria organisms. Consequently, these children are at large, most of them unrecognized, except incidentally, and do not receive such care and attention as is necessary to free their throats from the organisms that constitute a hazard to others not immune. Even universal Schick testing does not suffice to protect the community against this type of bacilli carrier, save in

so far as known immunes receive active immunization. The determination of the immunity of the individual would require a supplemental study of the throat culture.

Far more significant, however, is the problem of the absence of diphtheria bacilli in throat cultures of patients actually suffering from the disease. Experience has demonstrated that the superficial swabbing of an exudate is less likely to yield satisfactory diagnostic results than a culture derived from under the membrane, and yet this latter method is less common in actual practice.

Prognostic elements in diphtheria depend upon the virulence of the infecting organism and the inherent powers of resistance of the patient. In practical daily treatment it is impossible to determine either of these elements, with even an approximation of exactitude. Hence, the early diagnosis of diphtheria becomes imperative. This is all the more true, inasmuch as diphtheria mortality increases in almost an arithmetical progression for each day of illness, antedating the administration of antitoxin. In general, it may be said that the immediate injection of antitoxin within the first twenty-four hours results in a practically zero mortality; after forty-eight hours, three to four per cent. mortality; after seventy-two hours, six per cent. mortality; and after five days, twenty-three to twenty-five per cent. mortality. This fact creates a definite hazard in suspending treatment with antitoxin, pending definite information concerning the results of the cultures. Hence, more dependence should be placed upon the clinical diagnosis of diphtheria, and in all instances where there may be doubt, antitoxin should be administered at once, to be supplemented by such large dosage as may be required

in the event of a positive culture being returned.

The tendency to rely entirely upon the laboratory diagnosis carries with it a certain measure of responsibility, and probably is a factor in the failure to reduce the diphtheria mortality to its minimum. It must be recalled that the destructive agent in the disease is a soluble toxin, whose intensity and fatality cannot be determined by the external exudate, nor, indeed, by the febrile reactions. The rapid pulse is far more indicative of the toxic effects brought about by the invading microorganism. The clinical diagnosis of diphtheria, with its necrotic membrane, which is followed by bleeding upon its removal, glandular enlargement, a rapid pulse, and only a moderate rise in temperature, are the general and local factors demanding consideration for diagnosis. The laboratory report upon the culture is a corroborative measure of clinical judgment and in only a comparatively small proportion of instances may it become the determining factor as an indication for the administration of the therapeutic antitoxin. The earliest diagnosis is bound to be the clinical one, and awaiting the report of the laboratory involves the wasting of from twelve to twenty-four hours, which adds to the mortality hazard of the disease.

To My Doctor.

I think God's eyes will be like your eyes—
Seeing all men's frailties,
The courageousness of their spirits
And loving them.
Watching them struggle and fail,
Yet being compassionate.
You mend men's bodies,
He mends their souls.
I think God's eyes will be like your eyes.
—Chicago Tribune.



The Therapeutic Value of Odors.—The therapeutic value of odors in the treatment of nervous derangement deserves of the heartiest recognition, says Dr. W. H. Morse of Hartford, Conn. In ancient times, before scientific procedures and remedies were ever thought of, incense was burned in the sick room, and aromatic oils were applied to the person of the sick. This should have suggested long since that odorant substances can be employed advantageously, in conjunction with indicated medicines and remedial measures; but altho physicians have learned that drugs, surgery, diet and nursing are not the only measures that play important parts in the treatment of disease, it is but recently that there has been such a recognition of pleasant odors being therapeutic.

We are finding that sandalwood relieves the nervous excitement in fevers, that balsamic odors from pine-needle cushions are quieting in insomnia, and that neurotropics declare that they feel easier when essential oils are used topically. But more pre-eminently valuable are the floral odors. That which our French cousins call balance is recovered more rapidly in the treatment of nervous distempers if the smell of violets is present. Sick children enjoy and are benefited by the odors of sweet pea, lily-of-the-valley and rose. Wherever the nervous element is prominent, the fragrance of flowers moderates it almost invariably. Convalescents from accidents or surgical operations appreciate such scents as lilac, lavender and heliotrope, and upon their removal from the room they become restless, and unfavorable symptoms are frequently manifested.

In the course of more than forty years of professional practice I have made it a rule to have sweet-smelling flowers in the sick-room, as an agency for the pleasure, comfort and well-being of patients. It is

far from being a matter of mere sentiment. While it makes an impression that binds patients to their physicians, this is not all—always and ever there is possibility and the sheer probability of remedial influence.

Prohibition and the Flapper.—Studies of the problem of prohibition have up to the present concerned themselves almost exclusively with its effects on men, as tho they alone bore the chief brunt of its ills or reaped the benefit of its fruits, meagre as they may be; and, in this concentration on the effects of prohibition on the male world, some of the most important and perhaps the most pernicious of the by-products of the "abolition" of liquor have gone almost entirely unnoticed. Even the enemies of prohibition have failed thus far to point out what may be considered one of the most serious aspects of the problem: the effect of prohibition, or what goes by that name, on women. The recent raids on Greenwich Village night haunts, with the arrest of numerous girls still in their teens, and the raids on gambling houses frequented exclusively by women, have thrown light on an obscure and shocking condition which is the immediate upshot of prohibition. For the dry régime has completely destroyed the innate feminine abhorrence of intoxicants and has made fashionable what once was held execrable. In the old days, men would rise from the dinner table and retire for their cigars and liqueurs, while the ladies remained to talk of the things close to their feminine hearts. The cigarette habit among women broke down this formality slightly, but prohibition put the finishing touch to it. Not only has it become the "smart" thing for women to invade the masculine realm and take their liquor as "one of the boys,"

but the flapper, that vanishing species of in-subordinate girlhood, has suddenly come to life again, a new trick being revealed to her in a bag which had seemed to reach the point of exhaustion. Girls of sixteen, who had begun to tire of their rôle as shock inventors because they found that their caprices were no longer shocking their elders, now have found a way to do this more effectively than ever before: breaking the law, without incurring censure because the law is a silly and unpopular one, has become a delightful and original pastime, and for a young girl to avow that she was intoxicated makes her feel not only that she is a heroine but somewhat of a martyr. The spectacle of the young girl in an intoxicated condition is commonplace today, and (what is chiefly deplorable) elders are too prone to look on indulgently and regard excessive drinking by young girls as an original and amusing form of mischief. The general disrespect for the Eighteenth Amendment, and, along with it, for the majesty of the law, has so confused frail minds that they find amusing a breach of that law without any consideration of the circumstances. Never has there been shown such sympathetic indulgence for drunkards and drunkenness, and even the spectacle of a young girl in her cups is but a subject for facetious comment. Yet what this growing practice of drinking among girls is leading to, a general degradation of the moral standards to a low level with perhaps no precedent, should give pause to those with the slightest concern for public morals.

Recent raids on establishments conducted for the exclusive benefit of ladies with sporting instincts likewise reveal a deplorable condition, due in no small respect to prohibition. Even the most casual observer can testify to the fact that gambling has increased greatly since the abolition of liquor and women have not been immune from this form of spiritual drug. And as time goes on, the orthodox pastime of bridge for small stakes, woman's chief diversion in the past in the way of cards, is gradually giving place to poker, *chemin de fer* and the more inordinate form of card games, with high stakes the rule. It would, of course, be absurd to lay the blame for this condition entirely at the door of prohibition, but even an impartial observer must acknowledge that the increase of gambling among women

and the inauguration of the dry régime present the aspect of something more than a mere coincidence.

Birth Control and Free Speech.—Recently Governor Smith pardoned Jim Larkin, the Irish agitator imprisoned for utterances and activities regarded as seditious, justifying his act by the contention that the doctrine of free speech is still alive in this country. In ordering the pardon, Governor Smith uttered a few truths which struck an altitude of political idealism rarely attained by more pretentious statesmen. In some quarters, the executive of New York State is regarded as, politically, a man of mean stature, but his public statement on issuing the pardon reveals him as a more loyal defender of the sacred principle of free speech than many of his lofty contemporaries or predecessors. Liberal circles were greatly heartened both by Governor Smith's courage and by his lucid and unanswerable logic in defending his course, and citizens with an old-fashioned respect for principles advanced by the much-tooted but little heeded founders of the country were able to sit back for a brief space and recover a little of their faith in the survival of one of those human rights described in a memorable American document as inalienable. But their tranquility was not to remain long undisturbed. Hard on the heels of this thoroly commendable act and courageous Gubernatorial Credo came an incident which revealed once more the fact that the principle of free speech is the most abused of our inalienable rights. Less than a week after the pardon of Jim Larkin on the principle that freedom of speech is a reality, Mrs. Margaret Sanger was to have delivered a lecture on birth control in Albany, within a stone's throw of the executive building where Larkin's pardon was signed. The Mayor of that city, a Democrat, and a close associate of Governor Smith, promptly sent a detachment of police to the meeting-place and the gathering was broken up. Mrs. Sanger had come to Albany to exercise her right, as an American citizen, to urge the repeal of a law which she regarded as detrimental to the well-being of society; the law making it a penal offense for anyone to disseminate informa-

tion which, when disseminated as it is by the Birth Control League, can only lead to the breeding of a better race. Mrs. Sanger, despite the constitutional guarantees of free speech, was not permitted to address the Albany matrons who had freely chosen to come and hear her. Had she chosen to address a group of farmers on the subject of breeding better pigs, had she selected to speak to a gathering of florists on the subject of growing finer flowers, no one would have interfered. But as her object was to indicate to a group of mothers the shocking and obnoxious fact that better children might be raised, she was not permitted to speak. Her projected lecture, according to newspaper reports, was even less violent than that. It appears that Mrs. Sanger had gone to Albany to suggest that the laws of the State were unjust in respect to birth control education, that these laws ought to be repealed. Hearing of this project in advance, the Mayor acted at once. As he later explained, "We figured it would be impossible for anyone to talk on such a subject and keep within the law." He did not wait to hear the lecture, to decide if it did conflict with the law, and to suppress it if it did. He "figured" in advance and on no other basis than his inadequate (some might put it more baldly) conception of the meaning and aim of the birth-control propaganda. All this in spite of the fact that he had been assured that Mrs. Sanger had delivered that self-same lecture in numerous cities and had done so without any interference by executives as vigilant, at least, as the Mayor of Albany in the protection of their city's moral well-being. When warned that his attempt to stop the meeting was without legal precedent, the Mayor replied that he did not care a straw for legal precedent. Small wonder that, in the face of such contradictory incidents, foreigners find it so difficult to make up their minds about us, to decide whether we are a nation of idealists or of hypocrites.

Making Marriage Safer.—There may be some division of opinion whether idealism or hypocrisy is our dominant national trait, but there can be little doubt that we are a nation of sentimentalists. Our marriage and divorce laws are ample evidence of this. The tendency to romanticize the spontaneous relationship between the sexes, a tendency which has resisted all attempts at rationalization, is responsible for the most absurd and contradictory marriage and divorce laws of any modern country. Any move to correct faulty legislation in this respect, any measure to introduce a more logical and salutary system, has been strongly resisted hitherto, largely on the part of persons insistent on confusing the irresponsibilities of love with the responsibilities of marriage. It is heartening, therefore, to see a measure at last introduced in both houses of Congress in favor of uniform Federal marriage and divorce laws. What the fate of this measure will be ultimately it is not easy to foresee, but it is being befriended by powerful elements, chiefly organizations of women advocating a more enlightened and far-seeing attitude toward marriage. The law aims to make both marriage and divorce more difficult. It provides that the age at which boys and girls may marry with the consent of parents is sixteen years for girls and eighteen for boys. The age at which girls and boys may marry without the consent of parents is fixed at eighteen for the former and twenty-one for the latter. This provision, regarding which there is such contradictory legislation in the various states, strikes at the absurd sentimentality which has resulted in a mistaken indulgence toward early marriage, perhaps the largest contributor to domestic tragedy. Hasty marriages, the upshot of a momentary infatuation, a reckless decision which would have been deferred had there been an enforced interval between the decision and the accomplishment, are also provided for, the measure urging that application for license must be made by one of the principals two weeks before issuance. In addition, both parties must submit affidavits that they are not afflicted with communicable disease and are of normal mentality. Coming at this late day, this attempt to safeguard marriage against such obviously hostile and destructive elements as disease and mental unfitness will scarcely cause jubilation among those who have been pressing for such a measure for many years, yet it is somewhat reassuring to feel that it at last emerges as a reality, however belated. According to the measure, marriage is forbidden for the

feeble-minded or those afflicted with epilepsy, insanity or communicable disease. It seems incredible that such a long time has had to elapse before such elemental considerations should attain sufficient recognition as to win the support of legislators to the extent that they were willing to submit them for the approval of their colleagues. As for the divorce provisions, they are hardly as "radical." But the divorce laws proposed are of minor importance. If the marriage laws are amended as outlined, the divorce problem will automatically, and as a natural consequence, become less acute. How many of the suggestions made will ultimately prevail it is difficult to prophesy, but should the majority win approval and find their way into the Federal statutes a healthier condition of things will at once be apparent.

Disappearance of the Family Physician.—With the rapid disappearance of the family physician his field has been invaded by a crew in motley, the clowns of the healing art, who with tongues in cheek wax fat on the credulity of their helpless victims, says Nicoll in the *New York State Jour. of Med.* (December, 1922). The quack is here. Licensed or unlicensed, he will conduct his business under ever-changing names until such time as the public is taught by health education and demonstration what medical science can and can not do to alleviate their mental and physical ills; until physicians return again to the practice of the art of medicine and thus regain the faith of the mentally and physically sick and of that large class of persons who, for the need of a little sound advice, lead a life of misery; until specialization is restricted by boards of licensure to those who are actually qualified, and furthermore have given a certain period of years to the general practice of medicine; and, finally, until medical students are taught as a part of their regular curriculum the history of medicine, including the story of the rise and fall of quackery and the causes thereof, for only thus may the medical "heir of all the ages" learn to know the work of his professional forebears, and it is hoped, profit by following their very many valuable methods of practice, which have been so nearly forgotten.

The Service Rendered By Lay Organizations in Promoting Public Health.—The chief function of the powerful organizations of laymen in the public health movement is concerned with public information and education. They are not concerned with the administration of health affairs in American communities, for that belongs to the health officers. This is the gist of an address made by Dr. Livingston Farrand before the annual conference of State Sanitary Officers and Public Health Nurses at Saratoga Springs, N. Y., last June and reported in the October, 1922, number of the *New York Health News*. The speaker stated that laymen recognized long ago the fact that the health officer cannot get public support until public opinion is educated. One of the characteristics of the average health officer is that he is very wary about leading, but is willing to follow and to do whatever public opinion will justify. It is not that he does not know how or is unwilling, but that he has not the support he needs. The volunteer organization can make it possible to carry on certain demonstrations in work which, when accomplished, will have served to educate public opinion and arouse it to necessary support for the health officer. There is a definite trend toward consolidation of the various national organizations so as to get a great unified organized movement for public health. One of the great drawbacks in the past has been a certain pride or obstinacy and hesitancy to recognize the right of some other group to act. That is false pride, for it requires the action of every one of these possible factors to get results. Now there seems to be no real tendency for each to grasp a field that does not belong to it. Random effort is being minimized and cooperation intensified. The health officer is wise to utilize the knowledge and resources of these voluntary organizations.

Thoughts for the Day.
"Whatever the weather may be," says he—
Whatever the weather may be,
It's the songs ye sing, an' the smiles ye
wear,
That's a-making the sun shine every-
where.—Riley.

ORIGINAL ARTICLES

PREVENTIVE TREATMENT OF PUERPERAL FEVER BY BLOCK- ING AND POSTURAL METHOD.¹

BY

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This paper, which is really the complement of a paper previously published,² sets forth the subject almost entirely from a clinical point of view. Two reasons influence me to present this second paper:

(1) Because my first paper brought forth severe criticism.

(2) Because a review of the literature on the subject clearly shows that all the mortality and morbidity following labor is placed at the door of the country physician and general practitioner.

These writers on obstetrics and allied subjects dwell upon the virtues of asepsis and antisepsis as the all-prevailing measures in the prevention of puerperal fever. They enjoin elaborate hand and vulval disinfection as the only means of saving the lying-in woman from infection; and some would have us go still further—shave the pubis, scrub the vagina and never omit the

¹This paper was prepared for the meeting of the Tri-State (Va., N. C. and S. C.) Medical Association, Columbia, S. C., February 25-26, 1903.

Lost in the mails, it was only recently found when moving to this place, and brought up to date.

²Va. Med. Semi-Monthly, about February, 1900.

use of white duck over-suits, Kelly pads, sterilizing pans, etc., *ad infinitum*. In fact we country physicians are charged with criminal negligence for omitting to do all these things; or, to put it more nearly in accord with their implication, we are charged with cultivating and propagating puerperal infection. Only a short while ago, I read a paper by some St. Louis surgeon, where he made the statement that nearly or all the women on whom he did abdominal operations were brought to him thru the ignorance or carelessness of the general practitioners in not observing the recognized doctrines of asepsis and antisepsis. That may be true in the Valley of the Mississippi and elsewhere in this country, but I am of the opinion, that if it is true, that it is not due so much to the neglect of the physician in the use of ample hygienic precautions as it is to *his failure to use other and more efficient preventive measures*.

We country physicians may be dirty fellows—dirty not from custom nor from desire but from unavoidable circumstance of environment. But do we have more cases of puerperal fever (according to the number of lying-in women we attend) than our more fortunately situated brothers in the city? I think not, as I shall endeavor to show presently.

Recently I attended three labor cases in

one day—two were first births. The first patient lived one mile distant; the second five miles and the third six miles. The distance between the second and third was eleven miles. The roads were almost impossible—even on horse-back it was a trial to make the trips. What would the advocates of the indispensable "white duck suits, Kelly pads and sterilizing outfits" do here? "Hitherto shalt thou come and no further"—the plain English of which is asepsis and nothing else will prevent puerperal fever.

Permit me to quote from the *Boston Medical and Surgical Journal*, December, 1902, it said:

"For every case of puerperal infection which terminates fatally, there are many which recover; but by the term 'recovery' one must understand simply that the patients have escaped death." * * * "It is a fact that puerperal infection is, in the general practice of the profession, the cause of many deaths, and much more frequently the cause of protracted convalescence, critical illness and serious injury of the pelvic organs." Further on it quotes the following from a recent text-book on obstetrics: "On the other hand, in private practice it is questionable whether the results of today are materially better than before the introduction of antiseptic methods. * * * It would appear to us that puerperal infection is almost as frequent in practice now as fifteen years ago, for the reason that the doctrines of asepsis have not permeated the rank and file of medical men, much less those of the midwives, in whose hands a very large proportion of all obstetrical cases occur."

I have been a general practitioner for a good number of years and during that time I have attended lying-in women in all the walks of life and under all the varied conditions of cleanliness, both in the city and in the country. I have heard of a number of cases of puerperal fever occurring round about and I have seen a very few cases in

the care of neighboring physicians and cases waited on by midwives, but I am sure that if I have had infection in my work, it was in only one case and that one would not have happened had the nurse obeyed my directions. This happened in 1887. The patient is living and well. I have never done more, as a rule, in the direction of asepsis than to advise the use of water and soap, and in the obstetrical work that I have done among many of the poor and some of the better-to-do, as well, I have never been able to observe evidences of the proper application of even these two very cheap and indispensable household articles. Barring the case cited above, no infection has followed—certainly no mortality, and I am not cognizant of any morbidity. Tho I have attended a good many hundred cases of labor, beginning back in 1877 when babies came almost as rapidly as English sparrows, I am confident that not a single patient has ever had to seek the services of a gynecologist to correct the results of any criminal negligence on my part for not adhering strictly to the prescribed rules of asepsis and antisepsis. Therefore my conclusion is that there are not many cases of puerperal fever in my work that can be directly attributed to neglected asepsis and antisepsis.

Quoting from the same paper: "In modern lying-in hospitals the death rate from this cause has been reduced to a fraction of one per cent." The death rate, however, does not tell us how many cases of infection occur in these hospitals, but if we are to judge from what the writer has told us that "for every case of puerperal infection which terminates fatally, there are many which recover, etc.", we must naturally conclude that the number is not small; and this being true, the inference that many

patients go out from these hospitals with "permanent serious injury of the pelvic organs" should not be thought unreasonable. We see, then, that when we look into the matter a little more closely, we find that even the best carried-out methods of asepsis let infection enter. This cannot be denied. *Then does asepsis as authoritatively taught prevent?*

Cleanliness is all right at all times and under all circumstances; *asepsis is not attainable*. Our first duty is to determine the predisposing cause of disease, then if we know the active cause, we are in a favorable position to suggest a rational preventive treatment. Whatever influence effects cell formation, cell growth and cell energy tends to lower the resisting power of the organism and to encourage the encroachment of disease—whether communicable or not. This is specially true in the case of the less virulent toxic micro-organisms which cause puerperal infection. *They are innocuous in healthy blood, nor do they enter the normally contracted uterus.* This constitutes the basis of my preventive treatment of puerperal fever—it's nothing more or less than individual prophylaxis. Intelligently applied to every other disease it will act just as well. At the time my first paper was published, this view of the innocuousness of pathogenic bacteria in healthy blood was absolutely denied by bacteriologists and of course by the profession at large. Since that time, however, I see from reports of the Pasteur Institute, France, and I gather the same impression from our Dr. Vaughan's publications, that it is now known that disease-producing germs are innocent when introduced into the healthy body. Anyway I had always held to that view, still hold to it, and, as a

working basis, it has given me satisfactory clinical results.

I feel sure that the preventive treatment I have found so satisfactory (tabooed as it has been and perhaps still is) will ere long be advocated in the text-books of this and other countries. I do not think this is too great an anticipation.

Few physicians will deny that the pregnant woman claims the wisest and most conservative direction. Her system during this period demands not only its own essential quality of physical vigor but it claims as well the physiologic demands of the developing ovum. Here, it seems to me, we have the most remarkable of all physiologic processes at work, and surely the time is at hand when we should fore-stall the ordeal of the puerperium—a period inevitable and at no time free of danger. Our duty, then, should begin at conception and in the care of her case the cardinal point to regard, to foster, to emphasize is immunity. What immunity is we need not stop to consider—further than to state that a normal functioning body, viewed in connection with the etiology of puerperal fever, is quite the same thing as an immune body. Therefore, we should aim not only to correct but to provide against morbid conditions. To do this we must carry individual prophylaxis down to the constituent cause of disease and strive to conserve normal cell energy, by promoting adequate cell formation and proper cell growth. Nutrition must be a success. Waste and supply must maintain a balance. Tissue change and tissue growth must work in harmony.

Prevention of disease is more important than treatment of disease. Up to recently, preventive efforts by the authorities have been confined almost solely within the cir-

cumscribed bounds of asepsis and antisepsis and serum therapy. Those most interested in the subject seem to have lost sight of the amplitude of opportunity afforded. While I am at least partially aware of the good present-day preventive measures have proven to the human family, I verily believe that they fall far short of the actual scope comprehended in the term "preventive medicine". I am confident from personal observation of results attained, and, as pointed out in my former paper on "Preventive Treatment of Puerperal Fever", that we should give more thought and earnest attention to individual prophylaxis or, in other words, should consider prevention in all its parts. I feel certain that if we viewed preventive medicine in its proper scope, we must strive to know to what extent existing pathologic conditions, physical and mental, predispose to disease—whether communicable or not. And when applied to puerperal fever, I am sure that a systematic individual prophylaxis is more important than the present-day practices of aseptic and antiseptic methods.

Rational prophylaxis should begin before conception, if this were possible, for many of the organic and systemic underlying influences which eventually evolve into predisposing causes of puerperal fever, begin in the adolescent days of the lying-in woman's life; and, in many instances, it were well for her if we could go still further back in our preventive efforts and antedate the moment of her conception—correct the physical and psychical defects of her parents. This, gentlemen, discloses a vast field of preventive effort and the suggestion may possibly seem unreasonable to many of you, but I venture to think that it will be a much touched question in the not remote future. We are pushing general prophyl-

axis—the prevention of disease. Then, why should we not push individual prophylaxis—the prevention of both deterioration and disease? The time is not yet existent for the workings of individual prophylaxis in every case. Husbands and friends have not been impressed with the necessity of the importance of this antecedent care and direction of pregnant women. Besides, many cases of labor are sprung on us suddenly and we are forced to take them as we find them. We can bridge them over the critical days of labor and the puerperium, but we cannot bring to bear the good that should have been given to both mother and child.

The etiology of puerperal fever is essentially three-fold—muscular, neurotic and hemic. It is an old saying "that no chain is stronger than its weakest link." This is just as true of the human body. If the muscles, or nerves, or blood are weakened, the system as a whole is weakened. The uterus, like the heart, is a muscular organ and capable of being disabled in its muscle, its blood supply and its nerves. Every muscular organ possesses a peculiar natural action called function. Every function must have its inherent vital force or stimulus and every vital force or stimulus must have its appropriate and sufficient support. Modify its stimulus or its support, and there can be no reciprocal relation or capacity—in other words, there can be normal function. If this is true of the heart and true of other organs, why is it not true of the uterus? If this is true and it is, every unphysiologic condition of the uterus at the moment of conception, and every other local or general weakness acting before and during the pregnant state is sure to have a more or less injurious influence on the lying-in woman during labor and

the puerperium. Weaken her natural life forces, and you certainly emphasize her liability to infection in childbirth and during convalescence. The converse of this is likewise true. And as a predisposing factor, we should not overlook at least some of the causes of muscular insufficiency of the non-pregnant uterus.

In many instances there is a strong analogy between the condition of the non-pregnant uterus and of the uterus after parturition. It is no uncommon occurrence to find the non-pregnant uterus larger and thicker than normal. There evidently is increased blood supply, with venous stasis and a perversion of the normal relation of the muscular tissue to the connective tissue—the latter tissue increased in quantity and the muscular contractions weakened. We find this condition pretty clearly demonstrated in the sub-involved uterus. Then we have what is known as the myomatous uterus—where there seems to be an increased arterial blood supply, with accompanying venous stasis. Another example of enlarged uterus with congestion is coincident with adnexal or periuterine disease. Again, during that retrogressive period familiarly known as the "climacteric," the uterus frequently becomes larger and harder than normal, from muscular and perhaps vascular changes. Some young girls have abnormally enlarged uteri. And if you will watch the future history of these young patients, you will very likely find that their adult life is divided between visits to some doctor's office and the table of the gynecic surgeon. It is not improbable that the tendency to congestion is somewhat favored by the position of the uterus as related to the blood supply. In almost every position of the body the return circulation is opposed to gravity. This retardation of

the uterine circulation may be still further aggravated by constipation (and most women are constipated) and from the multiple causes which go to produce constipation.

Do you not think that these defective uterine conditions in the non-pregnant woman can act as predisposing factors of infection when she reaches the climax of pregnancy? I cannot think otherwise than that her best interests demand our comprehensive and impartial consideration. The function of preventive medicine is not limited to the narrow bounds of asepsis and antisepsis and serum therapy—its natural action determines its application to all diseases.

Knowing the condition that predisposes to infection, we should be able to prevent the actual process. It seems to me that a better acquaintance with the infection makes it evident that it accompanies many conditions of disturbed innervation, blood supply and secreting power of the glandular system. It is also a necessary or collateral issue of defective excretion either by the alimentary canal or the kidneys. These produce a general functional impairment and a consequent lack of vitality of the entire body. This condition of deficient innervation may be innate to the individual and evidently the impression of inheritance. Just as some persons are born into the world with congenitally inadequate organs, so we may have sufficient evidence that others may be ushered in with congenitally inadequate capacity, tissues, etc. It is now recognized also that the presence of toxins, toxalbumins, etc., in the blood is a direct cause of depression of the vital powers, the nervous centers being affected and the vitality lowered by definite poisonous principles absorbed into the blood from the in-

testinal tract where they are formed by the action of certain groups of bacteria. In concluding this very immature consideration of the nature and predisposing causes of puerperal fever, we should not lose sight of the fact that it not infrequently happens that the insidious advances of certain organic diseases in their incipiency produce alterations in the blood and impairment of the general health, which might be mistaken for a time for some very slight ailment but which upon closer investigation turn out to be chronic nephritis, tuberculosis, cancer of the stomach, etc. All such vague conditions should receive systematic examinations and wide-awake attention by the physician before labor sets in, because the ordeal of the puerperium may precipitate a crisis and such a lowering of the vital forces as to open up the way for the introduction of pathologic organisms.

Trustworthy prevention in these cases should begin with conception, continue thru pregnancy and wind up with ergot, strychnine, posture and fresh air at the puerperium; and the ergot kept up for from six weeks to three months. It matters not whether this lowering of the vital forces is inherited or acquired, due to the effects upon the nerve centers of toxins, stimulants, narcotics or other causes, there is an associated weakness of the motor function of the uterus during and after childbirth. To get the best good, all the good in fact, from preventive measures, one must effect a change from a liability to a stability of the system of the pregnant woman—asepsis will help and that is all. It needs supplemental measures to carry prevention to a distinctive result.

The boggy condition of the uterus so often observed at childbirth, and especially in infected cases, is due to blood-pressure—

not, however, to propulsive blood-pressure, which we want, but blood-pressure from venous stasis, as the result of strained anatomic or physiologic lesions. Here nature needs the aid of intelligent direction and the aid of ergot, strychnine, posture and fresh air to bring on protective uterine contractions.

It is a well-established fact that midwives' labor cases are more frequently infected than those attended by physicians. Did I ask "why"? I am sure the unanimous response from this body of medical men would be "From their neglect of aseptic and antiseptic precautions." I cannot think that this is the reason. Ignorance handicaps them in the after-care of lying-in women. If they understood the indications and uses of ergot, strychnine, posture and fresh air, I am convinced that the present notorious midwife would soon be held in more pleasant esteem. But how can we expect midwives to learn when the members of the medical profession are so slow in doing what is so easily done and at the same time so effectually do what they are taught they should strive to have done.

When called to a case of labor, I do now as I have always done and tried to get others to do: I take a bottle of the best make of chloroform and a vial of fluid extract of ergot. Administered properly, chloroform will save the patient much pain and the consequent shock. To put it briefly, it will help her to resist infection.¹

Just as soon as safe after the birth of the baby and the expulsion of the placenta and membranes, I usually give a dose of ergot; then I have the comfort of baby and mother looked after. Lacerations, if any,

¹ Author's paper, "Chloroform in Labor," February, 1902. Some copies of which he has for distribution.

are next given attention. I use serviettes but never vaginal douches, as dependent drainage is a safe and sane measure. Using the commode cleanses the uterus and vagina. Nature provides her own antiseptic secretions and posture does the rest. I look upon every interference by vaginal douching as pathologic, tending to occasion either chemical disturbances or septic processes.

It is of first importance to use every care to prevent retention of the secretions. A well-drained uterus and vagina never become the seat of puerperal infection. Ergot, strychnine, posture and fresh air will leave nothing undone in this respect. Give ergot in doses just large enough to keep up a noticeable bearing-down feeling in the uterus—three or four doses a day; and have the patient lie on either side, move from one side of the bed to the other, and especially see that she gets out of bed or rather that she sits on the chamber as often as necessary. *Ergot prevents absorption and posture insures thoro drainage and cleanliness;* strychnine stabilizes the nervous system and regulates glandular and organic action. With free drainage the endometrium and mucous surfaces can purify themselves. When posture is absolutely contraindicated from excessive hemorrhage, cardiac weakness, etc., still use ergot and assist natural drainage by elevating the hips. Should ergot seem to not sustain uterine contractions (which must be very seldom), long and copious irrigations of the rectum with hot saline solutions will usually give efficient aid.

Vomiting may be often controlled by one-drop doses of tincture of iodine in water at half-hour intervals.—*Med. Summary.*

SOME MEDICAL CONDITIONS OF EASTERN MEXICO.

BY

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The large number of Americans now employed living in Mexico, especially Eastern Mexico, makes consideration of conditions surrounding them of importance.

"Is Mexico safe from a health standpoint?" is usually the first question.

"Yes, if adults, and certain precautions are taken." But no American is going to thrive there. I refer to the eastern portion; all climates can be found in Mexico. The native condition is squalor. They not only live, but thrive, in filth, and the native (*peon*) is often the "carrier" for a number of infections. There is nothing in the environment of the Gulf, where most Americans are located, that is cheering or invigorating. Tampico has no attractions. Food conditions are poor and expensive. Beef is stringy and poorly nourished; the climate and absence of cold storage compel immediate consumption. The other fresh meat available is fish and fowl. The fish is the red snapper and is excellent, also shrimp, but the fowl is ordinarily an example of the requisite toughness necessary for fitness to survive. Milk if only of the canned variety and water itself is limited and requires purification. Oranges and bananas, yams, tomatoes, potatoes, cabbages and every kind of pepper. One becomes expert with a can-opener. Kerosene is the fuel. Electric lighting is general and extends even into the oil camps. Life is not livable without thoro screening and a good electric fan. Panama is far preferable, with the regular trade-winds and unfailing cool nights, to the climate of Vera Cruz or Tampico. The

amusements are an occasional cheap monte-bank performance, moving pictures with sub-titles in Spanish, an occasional dance (*baile*), very good hunting, if one can find a car that will stand the trails. Deer, ducks, wild turkeys and quail abound. Twice a week there is a band concert in the plaza. Open bars and a section of the town given over to prostitutes are the social menace to the health of lonesome youth.

The world demands oil and the mineral of the interior. The companies pay from $\frac{1}{2}$ more to double the amount that similar work would bring in the States. There are seven large oil companies with headquarters in Tampico and operating in its vicinity, each employing from 2,000 to 3,500 men. There are some fifteen other and smaller organizations. Ten to fifteen per cent. of the employees are American or English, with an average age of about 28. These men are entitled to every kind of safeguarding and the real work of the physician is not the protection of a rich company from damage claims. Competent medical supervision means the saving of large sums, for the sick or injured American receives full pay and the *peon* half pay while incapacitated. A few of the companies have "club houses" in which the bachelors live, and individual, comfortable houses are provided for the higher paid officials and their families, and most married men can obtain quarters. Large sums are spent on the bachelors' mess, and tho the food is generally of good quality, it is often wrong for the climate and carelessly or faultily prepared by the Chinese or colored cooks. Water for the baths comes from the Panuco River and frequently contains crude oil. The club house may contain a billiard and pool table—so much for living conditions.

Diseases and Injuries.—Of minor ailments,

the most frequent are trichophytosis corporis, easily combated by soap and water and sulphur ointment; an eye infection from a bacillus smaller than the Koch-Weeks, yielding to holocaine, argyrol and boric acid; and foreign bodies in the eye almost daily; impacted cerumen, frequently associated with some fungus, upset bowels and inflamed soles of feet, until acclimated.

Of graver conditions, malaria takes pre-eminence, of course. The usual custom of passing the quinine sugar-bowl after meals or any prophylactic use of quinine, was emphatically discouraged. It only protects temporarily, as shown by Still, and the constant exhibition of quinine develops a tolerance by the plasmodium, making these cases, if infected, longer and harder to control. The dichloride was used for all methods of introduction, because the bisulphate, given in capsule by mouth, was frequently found in the stools as an unchanged solid lump. For the most part, the dichloride was given by mouth, calomel always the first thing on admission. A cracker and a small glass of milk, a half-hour before quinine time, with open bowels, enabled us to use the stomach without any sign of nausea or vomiting. The Mexican does not think he has had quinine, however, unless it is given hypodermically in buttock or vein. This is the result of the general tendency of Mexican physicians to use the painless, intravenous route for so much of their medication. Two and one-half to twenty dollars are charged for the intravenous introduction of a 1 c. c. ampule ($7\frac{1}{2}$ grains) undiluted, and but some 30 seconds spent in the operation. Sometimes a 2 c. c. ampule is used in the same length of time! Fatalities and lack of any indication for intravenous work do not deter. The struggle to get a Mexican to take quinine by mouth is unrelenting.

His hatred of quinine is only equalled by his love of aspirin. After he has had an intravenous injection he is negligent about any further dose, unless under your control as an employee and dependent on your certificate of disability, stating dates between which he shall receive half-pay. They frequently have three or four paroxysms in one month from neglecting to take quinine as directed. Syphilitic cases with malaria did not develop hemoglobinuria. *Anopheles* were attacked by destruction of breeding places and cover, drainage, introduction of lava-eating fish in streams and ditches, traps and screening. The mosquito "bar" should always be provided with outriggers so that hands, feet, arms or legs do not come in contact with the screen about the bed, thereby defeating protection.

We were constantly alive to the danger from "carriers."

An effort toward education was made with a Mason jar filled with egg "rafts," developing larvæ and pupæ and the hatched mosquitoes were seen on the gauze hood, over the opening. This was placed in the laboratory and thoroly explained to all. Later on the window of a store on one of the most popular corners of Tampico was used. A large, illustrated placard told the entomologic story in Spanish.

Mr. Le Prince of the Public Health Service, took charge of the campaign against the *stegomyia* when yellow fever began to break out in Tampico. An afternoon with Le Prince on a tour of inspection is a liberal education in mosquito domesticity and their relentless fecundity. The water barrels kept by the *peon* at the door of his *casa* were swarming with *stegomyia* "wrigglers." The overturning of these barrels at Tuxpam in the effort to check the invasion of Tampico (about 70 miles away) led

to offender's arrest before nightfall. Ignorance, filth, lack of cooperation and the usual antagonism to anything done by the gringos, certainly aided infected *stegomyia* in the early days of the big epidemic.

Large sums of money and several hundred men were contributed by each of the larger oil companies to fight the *bubonic* outbreak which proceeded. On the outbreak of the *bubonic* the municipal authorities of Tampico distributed the printed instructions here shown. The sad part of it was, that in order to collect the bounty on rats (25 to 50 cents each) the *muchachos* dragged the rats, after catching in the figure 4 traps, thru the streets at the end of strings to place of payment and immediate incineration without any preliminary immersion in the boiling water or 5% "creolina." The rat being necessary to yield the bounty, all killing by the plaster of Paris as recommended, was abandoned. The diagnosis of a case of *bubonic* or yellow fever was always contested. Fumigation of the vast shipping was immediately required, and necessarily caused delay in sailing. The ordinary graft for fumigating a tanker was \$40 to \$60. This can be avoided by the plant physician and two or three picked and trained Mexicans, who receive extra pay and do the fumigation. Inspection of this work is made by the representative of the U. S. Health Service, who signs the necessary papers. Fumigation can be immediately started on completion of loading. The method required by our Government was cyanogen gas and exposure of one and one-quarter hours. The sodium cyanide "eggs" are dropped into the wooden tubs or glass jars containing crude sulphuric acid, diluted just before using, in the usual proportions: 2, 3 and 4, with amounts used for cubic

space according to the requirements of the U. S. Government.

Dysentery of Both Amoebic and Bacillary

Origin.—Some cases of the bacillary type were very resistant in yielding to treatment. The use of silver nitrate, applied per rectum to the mucous membrane, on alternate days, after thoro washing out with distilled water, is well worthy of mention.

Syphilis.—A most unfortunate amount among the young Americans. When the subject of prophylaxis and a small prophylactic kit was brought up with the highest official of one of the largest companies, it was discouraged on the ground that it might appear that the company condoned wrong conduct. Chancroidal adenitis was severe.

Of *tuberculosis* the writer saw but little. In fact, there is a remarkable absence of bronchial and pulmonary affections.

Hookworm.—Great interest was felt in the investigation of the amount of this disease, and determination of the percentage of infected among the large numbers of Mexican employees. Former work in Panama and on men in the Army that came from below the Mason and Dixon's line, had shown such a large percentage and their cure had resulted in at least doubling their efficiency. Col. F. F. Russell, in charge of the laboratory work at Vera Cruz during our occupancy of that port, had told me of the large number of cases there, but our efforts at Tampico showed a surprisingly small percentage—hardly two per cent. Each man that came to the infirmary for treatment was given a card-board sputum cup, which he returned with a specimen of his stools the next day. They had other parasites, but *ancylostoma* or *necatur*, no. This is probably explainable on the ground that these men were well paid employees, buying their fruit in Tampico, which consisted almost entirely of oranges or bananas, from

which the skins were necessarily removed, wearing sandals or shoes and their skin pretty thoroly covered with crude oil. These men did no working on the upper strata of the soil. We were, therefore, unable to make observations on the increased eosinophilia, immediately following complete elimination, of any value.

One case of *dengue* was seen.

Of injuries, *burns* were far the most prevalent of the serious accidents. These were treated by a regular method and with remarkably satisfactory results: Pain and shock were combated and the surface cleansed with sterile gauze and peroxide. Effort was made to control toxemia by hypodermoclysis, Murphy's drip and plenty of water by mouth to dilute and increase elimination. The tent, I regret to say, was not used. Denuded areas were covered with carbolized vaseline, simple liquid diet and stimulation as required. An electric hair-dryer was used to dry the surface thoroly and the process of repair aided, after attack on any suppuration with Dakin's solution, by application of the medicated paraffin with a brush, rather than the fallible atomizer, at a temperature of 140° to 150°, in a layer, then a thin layer of sterile cotton was covered with more hot paraffin, extending a little beyond and over the healthy skin, but leaving a small space at about one inch intervals for the discharge to (sometimes) work out. The absence of good drainage is the main fault of this method, otherwise so excellent. The open-air method of Sneve was tried and found wanting. Exposure to sunlight and picric acid gauze were both abandoned.

Plenty of shot and bullet wounds. Effort was made to get statistics on every accident at the plant, to enable the following-up and guarding against repetition. A large number were due to the man's own fault and

carelessness. Fear of loosing the half-pay, granted in case of disability, if the truth be known, results in lies and garbled histories, so request was made that these two questions be answered by the foreman (*heife*) on the back of the card of admission to hospital for treatment: 1. "Was this injury the man's own fault?" 2. "Was it in any way avoidable?" Had the management compelled this information to be furnished accurately, it would at least have caused the foreman to take some notice of these injuries which might have yielded some dependable information.

Constant inspection of sanitary conditions and their immediate correction is necessary, but the latter is not acquired without a struggle. The suggestion that the cooks should wash their hands after using the toilet and before handling food, was in danger of being regarded as a personal insult, followed by a general walk-out of entire kitchen staff and waiters.

On our arrival the hospital consisted of one small building. Good American boys were in the same small ward with more or less filthy Mexicans. Nurse and helpers in the same buildings. A useless collection of old drugs and no equipment of any kind. A contract existed with a Tampico physician to furnish medical aid and he was on the plant for about an hour during the day. In case of emergency there was no chance of getting a doctor in less than an hour's time. The company realized the shortcomings and liberally supplied all requisitions. In a short time other buildings had been added to the "hospital," connected by covered and screened passageways. The nurses had their own building, which also supplied a room for sick women or children or American employees. The Americans had a building to themselves and the Mexicans their own ward. Drugs, surgical and labo-

ratory equipment, even a small but excellent collection of medical and surgical books on all subjects, were soon acquired. Complete records were started and kept, not only of the bed cases, but of every case treated. Smallpox, typhoid and paratyphoid prophylaxis were given to all that would take them. Trouble with stains was overcome by having them sent down on a tanker from a New York laboratory. The joy of good stains after uphill work with poor ones!

All sick and injured Mexicans entitled to treatment were taken from the native physicians and brought into the hospital and another large expense stopped. Sick and injured members of the crews of the company's tankers were cared for and taken into the hospital if necessary—in short, four different portions of the work were consolidated under one medical head, including the overseeing of fumigation.

Large numbers of men, as we have said, are employed sinking and operating the wells in the field, thirty to sixty miles away. The sick and severely injured are brought to the hospital by motor-boats, but the fact of large distance between them and trained medical help makes knowledge of "first aid" by as many men as possible, of great importance.

I emphasized this point in a recent article on "Petroleum Gas Poisoning." Carefully prepared "bulletins," covering conditions and methods for meeting them, never seemed to yield any satisfactory results. The personal visit and verbal instructions by the physician in charge are necessary.

There was a scarcity of good books for reading. A wisely chosen library plays a very important part for good anywhere and especially in a foreign country like this.

Daily, weekly, monthly publications should be available.

Athletics, ball games with other com-

panies, good moving pictures, good music and the right kind of dances are all necessary. There was a peculiar lack of any encouragement of the Americans of one company in making visits of any kind to another. There are spasmodic efforts at doing something for the employees. It has its difficulties, but the heads of several companies could consolidate in behalf of the men and go far in bringing a little welcome and deserved variety into a mournfully monotonous life.

The right kind of a woman as head nurse is of greatest importance. She can make or mar so much. She should be the physician's loyal ally for progressive effort and a leader in the spirit of good cheer. Surgical and obstetrical experience and knowledge of dietetics are very important, but the great qualifications are natural adaptability to this kind of work, tact, cheerfulness, and loyalty to the high tenets of her profession, with good health, but, alas, how scarce are the really *good* nurses, anywhere.

Another personality comes into the making or marring of constructive, progressive work on the physician's part and that is the general manager. He is the representative of the company. His work is for the directors, while the physician's is for the physical betterment of the employees, and this includes their happiness and contentment. The ideal conditions, of course, would be for the physician and general manager to work together. Show me a company with a general manager that discourages or takes but little interest in capable, constructive work on the part of the physician and I'll show you a company of dissatisfied employees, no matter how handsome their club house or amount of stock purchased at par after five long years of work.

To cite certain experiences of a physi-

cian will throw light on his difficulties in this work. This man had served in the medical corps during the war and had reached a lieutenant colonelcy in France. In 1920 he went to Mexico to take charge of the medical work of one of the larger companies. This company has a special room and mess for the higher officials in charge of different departments. They lunch together daily and talk over various conditions of the work at that time. This physician was never asked to join this mess by the general manager. It made no difference to the physician, who was receiving as large a salary probably as any of them. The company was the loser, for the man was ripe with experience. At last this man was treated to insubordination on the part of a spoiled nurse who refused to put a young girl, a stenographer of the company's, sick with a high malarial fever, in the room provided for just such cases, but in the house where this nurse lived. The general manager supported her in her insubordination and, of course, the physician resigned. This company lost the services of a man that had saved the stockholders thousands of dollars and had sufficient ability to care for every medical and surgical case that had come to this hospital and without any outside help over a period of ten months, excepting only a few eye and ear cases, which had been referred to a specialist.

No man can practice tropical medicine with any real interest or success unless he is a good laboratory technician, in addition to his other attainments. Such a man is entitled to at least \$500 a month salary, and his house.

Where a number of organizations are at work, emphatically in a place like Tampico, there should be a *general hospital*. Here work can be done at a reasonable price that is beyond the capabilities of the smaller hos-

pitals.

One hundred and fifty thousand dollars should be spent in the erection of such an institution equipped to meet all needs capably. A year ago it was necessary to send blood to San Antonio to get a reliable Wassermann. Tampico, with several thousand Americans, lacked not only a capable serologist and bacteriologist, but also a real roentgenographer and a first-class surgeon. The hospital should supply these. The companies could so easily combine and build it and place the organization, administration and directing in the hands of a broadly trained, efficient, and high-principled physician.

Inspection of the medical and sanitary conditions of every company should be made by an expert annually and a thoro report with recommendations in order to insure progress and proper safeguarding of all employees.

It would be fortunate if this could be compelled, and compliance with such recommendations enforced. Too much power is often vested in a single man, who may be so woefully lacking in vision and humane qualifications.

This country, so bad for children and so hard for women, holds flashes of color: Revolutions and the Panuco River before Tampico with a line of gunboats and tor-

pedo-boat destroyers cleared for action; hold-ups and cold-blooded murder of Americans, rarely English, about which there is only mention in the local papers, and more bodies shipped to the States, but never any official investigation; the grawsome ferocity and sudden chill of a "norther," bringing all shipping to a standstill; lightning hitting a great oil tank at night, with a violent explosion and then the high, dull red flames against the vast pall of smoke; barefooted soldiers, resembling bandits, marching thru the streets, or sleeping on the platforms or wharf of the custom house that receives four-fifths of Mexico's revenue, while their women cook tortillas, squatting in the dirty streets, and naked children play with curs; the crowded market-place, or a concert in the ill-kept little plaza, with the diminutive statue of the Great Juarez at one end; islands of beautiful water-hyacinths floating rapidly down the swollen river to the sea—great tarpon and porpoise playing and leaping high in the air; an evening at the Country Club, shrieks and a woman unconscious on the floor from a blow on the head by a bottle in the hand of her partner's jealous wife.

Flowers without perfume, birds without song and too far north for the comfort and glory of the Southern Cross—such is Tampico.



CRANIAL EXPLORATIONS.

After all, the fundamental problem in the majority of cranial explorations is the relief of pressure. In conditions of extreme intracranial pressure the surgeon may hesitate reflecting a dural flap unless he is reasonably confident pressure may be reduced considerably by the withdrawal of cerebrospinal fluid, and for this purpose a ventricular puncture is much safer than a lumbar puncture.—Dr. Chas. H. Frazier (N. Y. Med. Jour.).

IN THREE CAPITALS—GUATEMALA CITY.

BY

E. S. GOODHUE, M. D.,
Pukoo-Molokai, Hawaii.

Guatemala City certainly has a fine setting among verdant mountains and volcanoes, which not only threaten but act. At an elevation of nearly 5,000 feet its climate is said to be that of "perpetual spring," altho we found it rather damp and chilly. Possibly this was due to the unusual rain. Founded in 1776, after the ancient city now called Antigua had been destroyed by earthquakes early in 1500 and again in 1773, it also has suffered from volcanic disturbance, notably in 1917 when the most of its buildings were demolished and still lie in ruins—a sight of sad desolation.

At present the population of the city is 125,000, and several new structures are going up. But, owing to the fallen walls and to a monotonous uniformity in the streets—the buildings being of one-story concrete—the city does not present a cheerful appearance, especially in rainy weather. The streets are cobble-stone much upheaved, tho the sidewalks are better than those of the average American city.

Plaza de Armas which fronts the ruined old Cathedral, the Palace and governmental offices, is a pretty spot where the National Band plays. The Temple of Minerva, Penitentiary, Military College, and Club House, are some of the newer and better buildings.

One of the most notable and, to us, interesting places in the city, is the Market—a veritable Cairo bazar, where not only all the fruits, vegetables and meats of the country may be bought at extremely low prices,

but where you may secure beautiful blankets, baskets, sashes, shawls, mantillas and toys made by the skilled and artistic hands of Indians. These people come in the morning, offer their wares all day in the great market and the adjoining streets, returning home at night. Blankets worth \$80 at home may be bought here for twenty pesos or \$10.



FIG. 1. Hookworm disease—side view.

But in order to do so one must barter and "Jew."

The unit of Guatemala is the silver peso or 100 centavos (50 cents). There are gold $2\frac{1}{2}$, 5 and 1 pesos, rarely seen, and silver coins of 1, $\frac{1}{2}$, and $\frac{1}{4}$ pesos. There is a nickel *real* worth $6\frac{1}{4}$ cents in our

money besides coins of smaller denomination in nickel and copper.

The water supply is not always uncontaminated, Dr. Berg tells me, and comes in the old aqueduct built by the Spanish *conquistadores*—a very interesting piece of work wonderfully preserved.

Reforma Avenue is a well-paved boule-

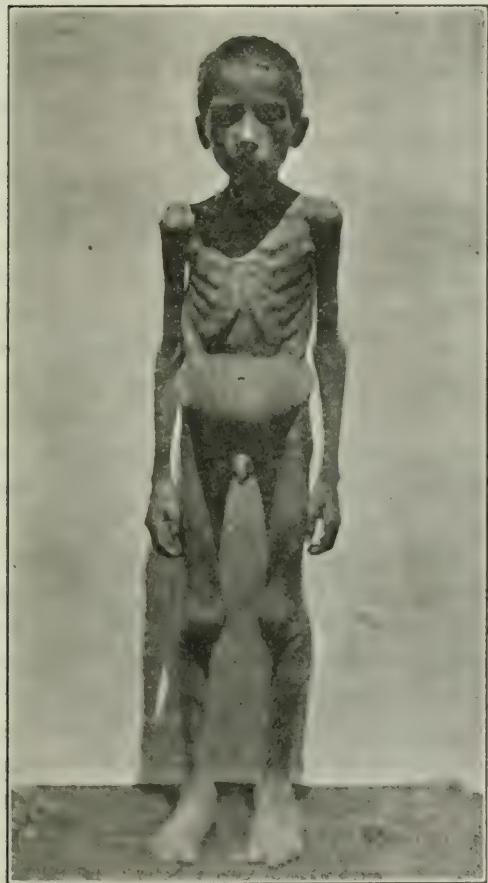


FIG. 2. Hookworm disease—front view.

vard ending at the Barrios statue, with much statuary, personal and symbolical, lining the drive. The double rows of Grevillea Robusta and pines look rather sombre to one accustomed to the tropical brightness of Hawaii.

The city impresses one as beautiful for

location, fortunate in climatic conditions, unusually free from insect pests and needing only that enterprise which made Habana and Panama sanitary, and gives to our American cities their beauty, comfort and convenience.

Perhaps in few cities is there a more attractive interior than that of the Guatemala Club. Certainly our Honolulu University Club does not come up to it in any way. It is exquisitely arranged and equipped, the furniture being of native woods—mahogany, ebony, rosewood and white laurel—in most artistic styles, all hand made. We sat there for refreshments one evening, the room open to all outdoors from a spacious *patio* in the center, moonlight and reflected artificial lights blending in whiteness upon the flowers and vines.

San Salvador.—San Salvador, capital of the Republic of Salvador, lies in its bowl of a valley at an elevation of 2,155 feet, closely and entirely surrounded by mountains and two conspicuous volcanoes—Izalco and San Salvador. These volcanoes are still active at irregular periods.

The present population is over 80,000. There are many good buildings like the National Palace, National Theatre (from the top of which we had a splendid view of the city and took some pictures), the University, Medical College, Rosales Hospital, and Cathedrals, the latter having tawdry interiors. The club interior is very beautiful. Here gather men and women on equal footing, for the Salvadorean is progressive altho his women have not secured suffrage. Last night at a political meeting on the plaza where there were presidential candidates, two women spoke.

The streets are badly paved with cobble stones, and sewerage is surface. But the concrete sidewalks a foot higher than the

street, would do credit to any city. These walks are generally crowded in the evening, and I have supposed were made high to escape occasional flooding of the bed of the street. Alameda Avenue is lined with statues of Central American heroes, while street cars, as yet "mule electrics," run to most points in the city. There are several most beautiful parks, plazas and plazuelas—Morazan, Duenas, Campo, Bolivar, with statues, band stands and seats. Here the National Band plays several times a week, listened to by the life and beauty of the city.

Rosales Hospital is an up-to-date institution. The adjoining garden has a statue of Don José Rosales, founder of the hospital.

The Medical College, built a few years ago and a part of the National University, has well-equipped laboratories and lecture rooms.

The climate of San Salvador we have found much pleasanter than that of Guatemala City. It is cool and sunny but not hot. A breeze blows at this season which is dry, and the nights are so cool that one sleeps comfortably under blankets. On the whole, life here in winter at least, would, I should think, be extremely comfortable.

Tegucigalpa.—Altho Honduras is third in size of the Central American republics, having an area of about 46,000 square miles, its population is sparse, 13.7 per square mile, and its capital city is the only one having no railroad. This is due to its situation among the mountains, where it stands at an elevation of 3,200 feet, defying accessibility except at great cost in money and engineering skill.

Range after range of volcanic masses, valley, gulch, gorge, chasm, hills, mounds, forest and stream to cut out every access, yet a very good road winds and climbs from

the Pacific hamlet of San Lorenzo over 62 miles of picturesque earth and rock, into the heart of the city.

We left San Lorenzo at about 7 A. M., in a large automobile, traveled at a good speed all day, stopping for a few minutes at Sabana Grande for luncheon. The grade was constant, and the mountain curves were sudden, but we arrived without delay or accident about dark, not even dusty.

The forest and river scenes were beautiful—the air was delightfully cool all the way. As we crossed a splendid bridge from Comayaguela (Tegucigalpa's twin city) appeared the fortress-like President's Palace, and, once in the capital, we fell upon narrow streets, many of them Quebecquois in their steepness, for the city lies on a hillside. High up is a garden near the British Consulate.

The houses are unique, may of them two-story, mostly of concrete, with barred windows and heavy jail-like doors. Everything is locked and barred at night.

Notable points of interest are Park La Merced, the Teatro Nacional, Cathedral, University, telegraph office and plazas, well lighted up by electric lamps and beautified by statuary and foliage.

The American contingent of about 60 persons furnishes doctors, dentists and business men. Today the Justice of the Supreme Court of Honduras called upon me, with his son and daughter. He was a prominent lawyer. I have met Dr. Romero, dean of the Hospital, and a good surgeon, who has invited me to see a case of suspected leprosy segregated for diagnosis. The doctor does not speak English but converses in French fluently.

Thru the courtesy of Dr. David Bruce Wilson of the Rockefeller Institute here, I was enabled to visit the Health Department

building, with its well-equipped laboratories, and to meet several members of the staff. Dr. Belluchi is in charge of the chemical laboratory, and several trained bacteriologists were busy making examinations for hookworm and other intestinal protozoa. Dr. Augustin Santiago Brizio, a most scholarly and traveled physician, I was pleased to converse with thru an interpreter. The Health Department is his creation, founded against odds by his perseverance and private funds.

At present the Government furnishes 66 per cent. of the money to conduct the department, and the Rockefeller Institute the balance. Next year the amounts will be reversed, and the next year, the Government will assume the whole expense. The building is very well arranged, but not large enough, and the Government is soon to add another story.

In a most instructive interview with Dr. Wilson (who is a bright young Canadian), he informed me that a form of sleeping sickness is prevalent in Salvador. It is a true trypanosoma, similar to that found in Brazil, but milder than the African form. It is probably due here, as in South America, to a bedbug (*Lamus megistus*).

Dr. Brizio says that there is no indigenous leprosy here—that it is always imported, generally from Columbia and Ecuador. They were all much interested in our treatment of leprosy, and a representative of the Nicaraguan Government who tells me there are a great many cases in his state entirely untreated, has asked me to have our Board of Health send them full instructions regarding the new therapy. This I have promised to do, requesting a record of cases treated and other specific data.

Dr. Brizio has asked me to meet the President and will get me an interview in a few days, also with the Nicaraguan minister.

I am informed, as I was in Guatemala, that a few cases of elephantiasis are found here, the hypertrophy occurring always in the leg, generally below the knee. Dr. Wilson also agrees with Dr. Tenny of Guatemala in saying that the anemias generally attributed to hookworm, are often the result of malarial dyscrasias.

I am leaving in a day for a mule-back trip of four days to the interior to meet Dr. Robertson, who has been here for some 20 years. I go with an Indian *mozo*, blankets, mosquito net, hammock, provisions, and a rapid firing automatic.



DETERRIMENTAL EFFECTS OF CLOSE HOUSING OF CHILDREN.

The practice of keeping young children housed in close and usually overheated houses and apartments, with an insufficient amount of exercise and wearing heavy underwear for fear they will catch cold, is a potent factor in the production of malnutrition. Failure to train the bowels to daily evacuations promotes constipation in a condition which has a marked tendency to this complication.—L. T. Royster (Southern Med. Jour.).

GLAND GRAFTING.

BY

T. W. WILLIAMS, M. D.,
Milwaukee, Wis.

Modern works on physiology and biochemistry contain a rather fulsome discussion of the adrenal secretion, but very little is known concerning the function of the *adrenal cortex*, which altho closely related to the functions of sex is lightly treated as possessing an internal secretion. The clinical observations of the writer have convinced him that it possesses a true internal secretion which is quite as important, physiologically, in metabolism and biochemistry as any of the glands of internal secretion.

It is a generally recognized fact that its origin from the mesoderm in common with the organs of sex indicates its physiologic connection with those organs, to the cortical cells of which its cellular structure bears a close resemblance. Again in all cases of sexual precocity, the adrenal cortex is found hypertrophied; tumors of the cortex, as a rule, are associated with precocious development of the secondary sexual characteristics.¹

But in addition to all else, the fact has been discovered in my private practice, that the administration of thirty-two grains daily of cortex substance for two or three months noticeably develops the interstitial glands of the testicles and the size of the organs generally. It is evident from these facts that infantilism and lack of sex development is oftener due to cortex insufficiency than all other causes combined. This discovery, for such it really is, will be of great

interest to the medical profession, which heretofore could offer absolutely no remedy.

I presume feeding the cortex in pre-puberty cases would be even more effective, altho I have had no opportunity for trying it in delayed pubescence, but I do know that it works all right even in old men, and see no reason why it would not be equally effective in the opposite sex.

Lest some misunderstand, it may be well to state here that adrenal cortex is not an aphrodisiac, and is in no sense a remedy for impotentia sexualis; it simply promotes the growth of the interstitial glands and develops the organs. In rare cases, due to the stimulation of the cortex from a tumor, or other cause, it develops the sexuality of a child in advance of the usual age for that phenomena, but it has nothing more to do with libido than to mature the organs prematurely. In mature men and women, it increases the normal size of the testicles and ovaries by developing the interstitial glands, even in those of 70 or 80 years of age, and in this way improves the general physical condition; but the increase of libido and sexual activity, involves a different set of physiologic principles, which was discussed in a previous article in a leading medical journal.¹

The effects of adrenal cortex feeding are comparable to those of gland transplantation. Most of those cases undergo the latter operation with the idea that it will restore their sex activities. They may not be willing to admit that it was a delusion, but according to all known physiologic principles we know that the most to be expected from it is a general building up and restorative influence of the increased development and functional activity of the interstitial

¹See Guthrie's case in "Physiology and Biochemistry in Modern Medicine," by J. J. R. McLeod, M. B., C. V. Mosby Co., St. Louis, 1920. Also Lespinasse in "Endocrinology and Metabolism," Appleton, New York, 1922, Vol. 11.

¹ See the *New York Medical Journal*, July 20, 1921.

glands—and this is, indeed, often wonderful beyond comparison with any other method of treatment.

The popular conception that the new gland takes root and grows and functionates in the place of the old one is a most fallacious one as any well-informed physician is aware.

As stated by Dr. Lespinasse,¹ who has had considerable experience in testicular grafting, the external secretion of the gland ceases immediately after removal from the donor, and atrophies. But the interstitial cells survive and their functions continue. The testimony of Dr. Stanley who made some 30 transplantations of human testicles at San Quentin's agrees with that of Dr. Lespinasse. At the end of a year his grafts had dwindled to the size of a cherry, showing that any other animal gland would answer the purpose just as well as a human gland. The stimulant action of the graft upon the recipient's testicle may possibly increase its functional activity—but this theory has not been demonstrated. As a matter of fact, there is no reason why results similar to those of grafting should not be secured from the active principles of the glands, injected hyperdermically, according to Brown-Sequard's method, or used in an emulsified form per rectum. The experimental work of several physicians along this line of work, not having been finished, I will not take the matter up at this time, but may do so later on.

There is absolutely nothing new in testic-

ular gland grafting to justify either the exorbitant fees demanded, nor the heinous offense of robbing unsuspecting men of their glands by violence. Years ago it was not an uncommon practice for physicians to graft portions of thyroid gland instead of administering it internally. The principle is the same whether the graft is a portion of ovary, testicle or thyroid gland.

295 Third St.

Surgery a Science.—"The changes and reactions of tissues after operation must be borne in mind when selecting the technic for any surgical procedure. It cannot be too often emphasized that surgery should be more a science than an art. A surgeon who is a dexterous operator and who skillfully amputates a leg that with patience and scientific application could be saved, is merely a good artisan, and is distinctly inferior to the surgeon who could save the leg even tho he should be a bungling operator."—Horsley.

Present Status of Treatment of Tuberculosis.—One of the most potent factors in retarding progress in the treatment of tuberculosis, Pottenger (*Jour. A. M. A.*, August 26, 1922) says, is the pessimistic psychology which has surrounded this disease from time immemorial, and which, in spite of the great progress recently made, still holds sway in the minds of both medical men and laymen. Regardless of our lack of a specific remedy for its treatment, if the measures which have been gradually evolved during the last half century are applied when the disease is early and continued for a sufficiently long time, with the hearty cooperation of the patient, nearly all patients with tuberculosis can be restored to health. This optimistic statement presumes that: (1) Present measures used in treatment are sufficient to cause tuberculosis to heal; (2) these measures must be applied early; (3) the treatment must be carried on for a sufficient time; (4) the patient must give a whole-hearted cooperation. This paper consists of a discussion and elaboration of these four points.

¹ Op cit. "In homo transplants there is in the higher animals an immediate loss of the spermatogenic function with complete degeneration of the spermatozoa-forming elements. The interstitial cells of the transplant remain and increase in number, retaining their staining properties the same as before the operation." In my next case I propose to use a slice of (alien) adrenal cortex instead of testicle and believe I will get identically the same if not better results.—T. W. W.

SUDDEN DEATH FROM PNEUMONIA—REPORT OF CASE.

BY

D. H. GALLOWAY, M. D.,
Roswell, N. Mexico.

R. M. D. This patient was a man 69 years old. He was born and reared in Mississippi. So far as his history can be obtained he had no illness of any description except when he was 19 years old. He had done hard work all his life as a farmer until five years ago. At this time he was taken with a severe attack of "indigestion." In that five years he has been examined by a number of doctors, all of whom made a diagnosis of gall-stones, and altho he never had any severe pain and no jaundice they recommended operation. He has had a good many attacks of moderate pain in the stomach, mostly on the right side. I was called to see him about 9 o'clock on the morning of December 20, 1922. At that time he had a pulse of 100, temperature 100 and respiration 50, and was suffering from some pain in the lower part of the chest on the left side. This pain had come on suddenly the afternoon before at 4 o'clock. On examination with a stethoscope I found an area as large as my hand in which there were fine, moist râles. A few of the same kind could be heard in the corresponding location in the right side. There was no expectoration nor cough. I suggested the possibility of beginning pneumonia and advised as to his care, diet, etc. I requested that I should be called again at 4, at which time I wanted a report of his condition. At 4.30 they telephoned that they could see no particular change in his condition and left it to my judgment whether I should call or not.

At 5.30 I arrived there; his son handed me a chair and as I sat down by the bed I involuntarily exclaimed, "this man is dead." However, he began to breathe. I put a stethoscope on his chest and could hear nothing, neither râles nor heart-beat and in another minute or less he breathed his last. A limited post-mortem examination was allowed and the following conditions discovered: On opening the abdomen I undertook to examine the appendix, but could not bring up the cecum and at first I assumed that it was bound down by inflammatory adhesions. However, more careful examination showed the appendix to be normal and the cecum anchored below the brim of the pelvis by its natural mesentery. When I undertook to palpate the left kidney it seemed to be missing. The normal location of the right kidney was also vacant. I found a hard mass back of the mesentery extending on both sides of the median line, and by going thru the mesentery I found a horse-shoe kidney half on each side of the spine and joined by a flattend isthmus $\frac{1}{2}$ inch thick and about $1\frac{1}{4}$ inches wide. The liver was completely adherent to the posterior and side walls. These adhesions were very firm, but were broken up by passing my hand back of the liver. On the left side the spleen was found wrapped in omentum, much as you would wrap a piece of meat in a piece of paper. The adhesions were so strong that in trying to trip off the omentum, I took most of the capsule with it. It was also adherent to the lateral wall and the diaphragm. The peritoneum was so redundant that on pulling on the spleen it pulled up the peritoneum like a tent. On uncovering the spleen it was found to be 5 inches long and $1\frac{1}{2}$ inches wide. It con-

tained two sulci across the short diameter, one of which almost bisected the organ. On opening the chest I found both lungs manifestly affected, by the early stages of pneumonia. The viscera and parietal pleura were both covered with a fibrous exudate, white and smooth and almost $\frac{1}{16}$ inch thick. This was much worse on the left side where the pain originated than on the right side. There was a small amount of bloody fluid in both pleural cavities. On opening the pericardium I found there also a small amount, perhaps an ounce or two, of bloody fluid. The heart, as well as the pericardium, was completely coated with a fibrinous exudate which was light colored and rough like a layer of moss. This exudate, both on the heart and on the lungs, rubbed off rather easily, but left a surface looking inflamed. On the death certificate I stated that the cause of death was pneumonia of 26 hours' standing. The anatomical irregularities apparently had not interfered in any way with the man's life. The pathologic conditions about the spleen and liver are not explained. I found no indications of ulcer or other disease of the stomach or intestine, and the gall-bladder seemed to be more nearly normal than anything else, as it contained no concretions, nor were there any in the duct. It seemed impossible that the conditions in the chest could have arisen in the 26 hours which the man lived after the first symptoms developed.

A son of this man died of Bright's disease. He also had a daughter, 34 years old, the mother of three children. She had some trouble which was diagnosed as floating kidney. An operation was undertaken to fix this kidney trouble, but she died a few hours after the operation. Possibly these children inherited some abnormality of the kidneys which did not serve as well as the father's.

THE SYMPTOMATOLOGY OF CANCER.

BY

EDWARD PERCY ROBINSON, M. D.,
New York.

Considering life as a force kindled by a spark, and the number of causes which might extinguish it, none has produced more controversy than the loss of life thru cancer. In a recent medical comment we read: "Cancer mortality is increasing throughout the world. Furthermore, statistical inquiry indicates that all forms of cancer are on the increase. The contrast between the North and the South of the United States tends to corroborate the fact already suggested by earlier studies, that the frequency of cancer decreases with diminishing distances from the equator." If any value may be attributed to this geographical discovery it behooves us to engage passage for equatorial regions at once, for it is better to flee than to remain and perish. Should we go there, however, our contact with the natives may enlighten us regarding some dietetic features. Cancer is not found in Egypt, Siam, India, Korea, the Philippines, Japan or China. Williams, in *The Natural History of Cancer*, states: "During a recent extended trip thru the Far East, I was unable to see or even hear of any cancer, altho I met a large number of medical men and made inquiries regarding the same, and visited hospitals with a total of many thousands of patients." In these places just mentioned the inhabitants are not salt eaters. It seems that the Egyptians must have recognized the injurious action of salt and abstained from using it. In conversation with a physician who had spent fifty years in Egypt, the writer in-

quired whether he had noticed any instances of cancer there. His reply was that there is no cancer, Bright's disease or catarrhal conditions among the Egyptians; and when he was asked if they ate salt he remarked that they do not.

Another people singularly free from cancer are the Italians. Altho they eat large quantities of salted cheeses, cancer is not a prevalent disease with them. It is significant, however, to note that they are great vegetarians. Potassium nitrate is one of the main ingredients of vegetable tissue and because of this any excess sodium chloride which may accumulate in the tissues of the body will be displaced, and in like manner an excess of sodium will displace the potassium salts. The following may be illuminative on this point. The analysis of human milk by Bunge shows that the relationship of the two bodies, potassium and sodium, varies considerably (1.3-4.4 equivalents to 1 of soda). By the addition of salt to the food the quantity of sodium and chlorine in the milk increases, while the quantity of potassium decreases.

There seems no question that under nitrate diuresis a larger excretion of chloride in proportion to the other constituents occurs than under sulphates. Loewi ascribes this to the nitrate dislodging the chloride in the tissues and thus increasing its partial pressure in the blood; and Longlois and Richet have shown by actual analysis that the chloride of the tissues falls under nitrate treatment. Loewi observed diuresis from intravenous injection of nitrate, which resembled that from phosphate with the exception that the chloride excretion in the urine remained high under nitrate. Sollmann confirms the finding that nitrate injection increases both the percentage and the absolute amount of chloride in the urine

previously poor in chloride.

Commenting on the low blood-pressure of the Chinese, an editorial writer in the *Journal of the American Medical Association* remarks: "If we could tell why we might utilize this knowledge to alleviate the high pressure under which so many of our own people are suffering. * * * Whatever it may be that keeps the Chinese blood-pressure down, we should like to borrow it or imitate it." The fact that the Chinese are not salt eaters might account for their low blood-pressure. According to Ambard, in high blood-pressure the plasma shows an increased chloride content. It has been observed that in cases of high blood-pressure a restriction of salt in the diet has been followed by a remarkable drop. High blood-pressure is, in all probability, a physiologic function in the early stages and may be compensatory. The ingestion of salt has no direct influence on muscular action of the heart, but it inhibits oxidation by lessening the capacity of the red blood corpuscles to take up oxygen. To overcome this deficiency, heart action is stimulated and high blood-pressure results. This phenomenon may be observed in any instance where the demand for oxygen is great; the heart beats rapidly under exercise. It seems peculiar that in countries where salt is not used extensively the blood-pressure is normally low. Further on, the editorial writer referred to says: "Among the Orientals, the measurements made by McCay on Hindus from Lower Bengal, and the data secured at various times for the Filipinos, point uniformly to comparatively low systolic pressure in natives living in the eastern tropics. * * * To detect the fundamental factor responsible for the vascular conditions in the Chinese might mean the discovery of the best way to

avert hypertension among our people. * * * The relatively simple diet, largely vegetable in character and including little meat, cannot be overlooked as a possible contributory influence." This last suggestion is not new, it has appeared repeatedly in articles for the past five years. Evidently the editor in perusing these articles has begun to see a ray of light which no doubt has been excluded because of the intricacies and profundities contingent upon his editorial duties. Inability to recognize the value of a suggestion is sometimes resorted to as an evidence of a great wisdom.

The pandemic of cancer which prevails might be the means nature seeks to adjust the race to the artificial environment of its civilization. If it may be assumed that those peoples who do not use salt in their diet are free from cancer and those that do have cancer, then it remains for time to eliminate those whose tissues are incapable of assimilating this chemical—an instance of the survival of the fittest, for not everyone develops cancer as a result of eating salt. Many persons live to great ages who have been large users of salt. These are physiques, in all probability, in whom the elements sodium and potassium are reversible or, in other words, bodies whose cellular structures do not differentiate between the two. The writer is acquainted with a woman who has used great quantities of salt in her food all her life. She goes so far as to sprinkle it thickly on bread, and yet at the age of eighty-six is mentally and physically well. Her only complaint is chronic constipation, which is relieved with a pill of aloes, gamboge and croton oil taken once a week. The effect is on the order of an explosion.

In looking around for the cause of cancer, one which would seem to be a little

more original than the hundreds that have already been presented, someone thought that saprophytes were capable of producing cancer. This was based on the theory that intense cold inhibits saprophytic action, thus accounting for the reason why Esquimaux never have cancer. Comparing this theory with the geographical one regarding the absence of cancer in those living near the equatorial regions, we can see that both of these theories are unsupported by any facts whatsoever; for, on the one hand, if saprophytes cause cancer, those living in the equatorial regions should be greatly afflicted with the disease because the temperature would be conducive to saprophytic growth; and if the closer we get to the equator the freer we are from cancer, then the Esquimaux should be practically extinct by this time. In both of these locations the natives are abstainers from salt, and this is particularly so in the Arctic regions. No explorer has ever seen a case of cancer among the Esquimaux. In fact, these people abhor salt to such an extent that Steffansson, in order to protect his supply of meat from the possibility of theft, kept it well salted. These two theories as to the cause of cancer fall to the ground and may be buried in the shrouds of their illogical premises.

There are few diseases which have not a prodromal stage and cancer is not an exception. Physicians are gradually beginning to see that there is a symptomatology relating to cancer and have designated it as the precancerous stage. A cancer first begins as an inflammation, and inflammation is usually the result of hyper-acidity; therefore, in the recognition of the disease we should apply our efforts at the initial stage, not at the final manifestations of cancer. There is no difficulty in recog-

nizing cancer in its last stages, but attempts to cure it at this stage are always disappointing, while, on the contrary, the results of early treatment are extremely gratifying, so much so that one is led to feel that patients may be made immune to the development of cancer if appropriate treatment is applied at the precancerous stage.

In AMERICAN MEDICINE for December, 1922, Dr. Adam H. Wright, in his article, "The Prevention of Cancer," asks, "How can I detect the precancerous stage?" He goes on to answer the question by giving some symptoms, namely, pain, a feeling of fulness or distention after eating, flatulence, heartburn, bad taste, especially in the morning, bad breath, nausea, hiccough, water-brash, loss of appetite, regurgitation, vomiting, etc.; and he says that persistent indigestion, with loss of weight, and change in color, etc., are not early signs, they are late signs of cancer which has reached the killing stage.

Two years ago the writer gave a list of subjective and objective symptoms which might be considered precancerous; for example, constipation is almost always present in cancer and precedes it. It is, in all probability, the symptom of hyperacidity. The normal reaction of the intestinal juices is alkaline and when they become acid constipation develops. One of the essential factors in producing hyperacidity is an excessive meat diet, from the fact that in the process of digestion phosphoric, sulphuric and amino acids are created. These in time, if not neutralized in the body, extract basic elements from the tissues thus producing a condition of demineralization.

According to Richter, on a diet rich in protein, purin, carbohydrate or chloride, there will be a correspondingly high percentage of urea, uric acid, sugar and chlo-

rides in the plasma. It is impossible for these substances to exist beyond a certain percentage without producing both subjective and objective symptoms. Their presence in the urine, for instance, might be indicative of nephritis as well as a prodrome of cancer. Edema is also an indication of hyperacidity, and its etiology is founded upon an abnormal salt intake. It might be remarked that while this symptom is particularly indicative of nephritis, it is, nevertheless, present in a large majority of cancer cases.

Purin bodies, such as hypoxanthin, xanthin and uric acid are all toxic if not oxidized, so also are the alkaloids of coffee, tea and cocoa. When these substances clog the physiologic processes of chemical combustion they give symptoms very characteristic of their presence in the body. Creatinin is another nitrogenous principle extremely toxic. The excretion of creatinin, according to Mathews, is an index of the real catabolism of the vital machinery of the body proper. Meyers and Lough have determined that when 5 mgms. or more per 100 c. c. of creatinin are found in the blood all such cases have a fatal termination.

In advanced cases of cancer one frequently finds a patient suffering from profound depression, fatigue, vomiting with or without diarrhea, and as these symptoms are identical with the physiologic action of xanthocreatinin, the nature of the toxic substance suggests itself. However, these symptoms without diarrhea are very commonly seen in patients in the precancerous stage. A patient will often complain of becoming extremely fatigued on the slightest exertion, with difficulty in breathing. The latter symptom is expressed as "air-hunger"; while the lungs can be filled with air the sensation is similar to that of an

asthmatic condition; the patient does not experience the feeling of having taken a long deep breath. This is no doubt a result of improper oxidation, the oxygen is present in the lungs but the red blood corpuscles do not take it up. There are two kinds of oxidations going on in living matter—those taking place at the expense of the oxygen of the air and those in which the oxidation is produced by easily reducible food substances or their metabolic fragments. Protoplasm is made up of reducing substances. Oxidation in chemistry includes not only processes which involve the transfer of oxygen, but any process which results in the increase of the number of positive valences, or the diminution of negative valences of a compound or element, whether this is produced by oxygen or some other agent. There is a certain stage in living matter, however, when oxidation becomes impossible, and perhaps the first sign of this in a cancer patient is progressive loss of weight. The body is only capable of oxidizing a certain amount of the end products of catabolism. When these end products are allowed to accumulate to the extent of producing a xanthoderma, they demand a power of oxidation which the body does not possess. Now in the early stage of cancer, the prodromal or symptomatic period, the administration of medicinal substances capable of aiding the chemical-reducing processes of the body will give most gratifying results, and the symptoms of which the patient complained will disappear. When it is the happy fortune to treat the patient in this early stage a prediction of immunity from cancer can be expressed with little fear of overstepping the proprieties. Such a prediction is founded on a logical premise, for the es-

sence of oxidation actually depends upon the interchange of electrical charges and on this point Mathews (*Physiological Chemistry*) says: "An electrical disturbance of some kind, albeit possible within molecular dimensions, must occur in every combustion in the protoplasm and if in any way an accumulation of positive particles in one place and of negative in another could be produced, and if negative and positive particles had different actions on the vital processes, momentous changes might thus be brought about in living protoplasm." In an article entitled "Electrochemistry in the Etiology and Therapeusis of Cancer," which appeared in the *Medical Record* for July 24, 1920, the writer gave reasons to show how such an electrical disturbance may be brought about.

If we may be permitted to employ a homely simile for the purpose of elucidation, we might compare the fluids of the body with the chemical solution of an electric battery of an automobile. Both are composed of chemical substances dissolved in water. When the electric current in the battery of an automobile is low it can be restored by charging from an electric current and the battery will again be sufficiently powerful to do the work for which it was intended. If, however, the battery is allowed to run down repeatedly the chemical solution becomes weak, a deposit of sulphates is formed on the plates and recharging becomes impossible; the battery is then said to be dead. Similarly, the electrical disturbances which should occur in protoplasm must depend upon the chemical constitution of the fluids of the body. If this solution becomes weakened by allowing an accumulation of unoxidizable products, such as xanthin bodies, to occur, any

attempt to bring about electrification by the introduction of remedial agents will prove ineffectual. In such an instance, altho the body may be alive, it is only a matter of time when the spark of life will be entirely extinguished, because the human battery is incapable of creating electrical reactions sufficient to oxidize the excess end products or to permit of a transfer of oxygen. Therefore, the time to treat a patient for cancer is before the cancer has appeared. When cancer is present the electric battery of the body is no longer capable of restoration and the patient is doomed to death. The signals of a weakened electrical force in the human body are the objective and subjective symptoms present in the prodromal stage.

Too commonly little importance is placed upon symptomatology. Dr. Wright properly looks upon certain symptoms as "the killing stage." There can be no simplicity about a chronic state of constipation, nor can edema of the legs or puffiness under the eyes be considered trivial. A touch of neuralgia or twinge of neuritis is indeed a weighty matter. Fainting spells and an irregular heart are not passing fancies of the flesh. Gastric catarrh or atonic dyspepsia mean more than indiscretion in diet. Summed up in a line, these conditions point to a state of autointoxication, which in more exact terminology signifies that the individual is suffering from the poison of unoxidized leucomains, and if these are not removed, or if they have been present too long to be removed, death in a few years, more or less, will close the scene with one of the more pathologic conditions recognized perhaps as cancer, nephritis, apoplexy, organic heart disease, pernicious anemia, or some one of the many causes of death.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

IV.

"Mother, here is drinking water. Just take a little." Four year old Champa, standing beside the corded bedstead, anxiously waited for a reply. High fever had driven the woman into a delirium. She lay on the naked cords, with no article of bedding or clothing except her *sari*. This five yard strip of cloth Champa had spread to cover her. Hands and feet were bare, as she tossed.

From a broad basket on the floor came the cry of a seven months' baby. Champa ran and shook the basket. "Hush, Sita, stay asleep," she cooed, until the infant was quiet.

Hearing voices, she looked out at the front of the mud hut, one of the two-score which made up this low-caste village. Her father was coming, and with him the dirtiest, nakedest, most dishevelled-looking man she had seen since the holy men at the *mela*. The population of the village was close at their heels, the children dodging behind the ashy-hued cattle which stood tethered about.

As the magician approached the bed, Champa crouched at its foot.

"What has been done for her?" he asked.

"I tried to get her to count the leaves of the *nim* tree," replied the husband.

"When?"

"Yesterday. I carried her out under the tree, and made her count, but she could get only to forty."

"You waited too long. Had you done it before she became weak, she could have counted all of them. Then she would have recovered promptly. Now I shall have difficulty in scaring away the spirit. Here youngster, catch me a fly, a large fly."

With childish agility, Champa captured one of the flies hovering around her mother. Holding it gently between thumb and forefinger, she handed it to the magician.

By this time he had untied from dirty rags in his small basket a grimy mortar and pestle. Taking the fly with care, he squeezed it slightly, and dropped it into the mortar. To it he added a generous pinch of black pepper and ground them smooth. Asa-fetida and a bit of water completed the charm. Working this combination into a somewhat pasty substance, he applied half of it to each of the woman's eyes.

"The spirit will leave her and go away on the wings of the fly," he assured the husband. "See," as she began to kick and try to rub her eyes. "The spirit is already leaving her body. Just hold her hands, but do not restrain her otherwise." He seized her right hand as he spoke, and the husband, on the other side of the bed, held the left.

After a time the patient grew quiet and passed into a stupor. "When she wakes, the fever will be gone," the magician announced with authority. "The fee is one rupee."

Ranjit Singh coughed apologetically. "You will take chickens?" he asked.

"Two chickens if large."

The group of observers parted, and two naked boys ran to catch the chickens, which were enjoying the company of the cows. All their timidity gone, they marched in and presented their catch.

The magician lifted the chickens thoughtfully. "Very light," he affirmed, "a *seer* of rice will complete the fee."

Picking up a standard oil tin from the corner, Ranjit Singh knelt and with a small measure dipped out the two pounds of rice, into an ancient cloth which the magician spread on the ground.

The latter counted closely. "Right. Now tie the fowls."

Many hands were ready to help. Loading rice and chickens into his basket, the magician lifted it upon his head and strode off.

Ranjit Singh picked up the baby basket and carried it outside. There he sat down to smoke his *hookah* and await the will of the gods.

Champa trotted around busily, driving flies from her mother's face, offering her water, calling to her.



Champa and Sita Going to the Foreign Doctor.

When darkness fell, Ranjit Singh stretched out on the bedstead beside his sick wife. Champa crawled up on the other side of her mother and nestled at her feet. So they slept.

Champa awoke shivering. Her mother's feet were very cold. "Mother!" she called, sliding off the foot of the bed, and running to the head.

Her father sat up and looked around. "Her day had come," he said mechanically. "A rupee wasted. Call Shanti's mother to take the baby and feed it."

Champa ran to call the neighbor, while her father started to summon his dead wife's relatives from the next village.

* * * *

The funeral was over by eleven o'clock, but the funeral feast lasted until late afternoon. Every one who could claim kinship to the central figure of the day's proceedings was included among the guests. There were father and mother, brothers and sisters, nieces and nephews, paternal uncles,

with the food they had consumed.

An explanation was sought. "The evil eye," said one. "The evil eye," said another. The word ran thru the group.

But who had exercised this terrible power? Suspicion fell upon a maternal uncle of the dead woman. He had departed early, on a pretext of being needed at home.

"He sat by and watched all the cooking," declared a paternal aunt.

"We must call the magician," groaned one



Ranjit Singh's Village.

aunts, and cousins, and maternal uncles, aunts, and cousins.

To buy the rice and accessories for the occasion, Ranjit Singh had to visit the money-lender. The last, but one of his fowls went into the curry.

It was a worthy feast. Even baby Sita partook of it, sitting on her grandmother's lap. Every mouth declared the funeral a great success.

Soon after the feast was over, Baby Sita vomited her portion of the meal. Champa followed suit. One by one, various members of the party became similarly ill, until two-thirds of them had reluctantly parted

of the victims.

"No," declared another, the oldest man present. "I once saw a magician called to make a charm for the evil eye. All he did was to bring in some dead leaves of the *nim* tree and burn them on the house fire."

"Fine! We will try it," agreed Ranjit Singh.

In a few moments the leaves were collected, the fire revived, and the experiment performed. The result was highly satisfactory. Every one felt better, with the exception of Champa and Sita. Their symptoms persisted.

A majority of the relatives advised call-

ing the magician. Their father demurred.

"Take them to the foreign Doctor Miss Sahib, at Sunipur," urged an uncle. "She is a woman, and said to be very skilled in the diseases of women."

The five miles to Sunipur seemed a long tramp to Ranjit Singh. The baby was not worth it. But Champa—he did not want to lose Champa, for he knew that he could get a wife on better terms by having her to help with the work. Besides, she was betrothed to the son of a good friend of his whom he would not like to disappoint. He decided to go.

Before dawn he filled his water jar and set out, carrying the children in two baskets slung from the ends of a smooth board, which he rested on his shoulder. Champa filled one basket. In the other he had laid Sita, and beside her two *seers* of rice, his last chicken, and two live mice, as fee for the foreign doctor.

* * * *

Dr. Douglas had seen her last dispensary patient, and started to answer a call from the city. At the gate of the compound she met Ranjit Singh, streaming with muddy perspiration.

Returning to the verandah, she sat down and listened to his story, while Miss Paul made the children comfortable.

"It is the evil eye, *hazur*. Their mother died yesterday morning, and until I get a new wife I have no way of caring for them."

"They should stay here about two weeks," suggested Dr. Douglas.

"The baby may stay, but Champa I must have in a week if possible. My new wife will need her help."

"Need her help! Why, she is scarcely more than a baby!"

"She is very capable," asserted her father

proudly. "And besides, her marriage is coming in another month. Kindly cure her as quickly as you can."



THE QUESTION OF VITAMINES IN THE TREATMENT OF NUTRI- TIONAL DISORDERS.¹

Altho attempts to determine the nature and chemical composition of the vitamines have not as yet proved successful, the importance of the relations which these mysterious substances bear to the metabolic functions of the body is no longer doubted by any of the numerous investigators who are seeking to determine their functions.

While Nature has provided us with an abundance of vitamines in our foods, they are often far from adequately supplied in our modern diet, and for this reason it frequently becomes necessary to supplement this deficiency by the administration of preparations of vitamines.

A great many preparations of the vitamines have been put forth to meet the foregoing conditions. Loud and blatant have been the claims made by many of the sponsors for these various vitamine products, but as is always the case in the commercial development of new things, the preparations for which most has been claimed have been found least valuable on investigation and trial. As a matter of fact,

¹This paper is another of the series of special articles which will appear from time to time, and represent certain special studies and investigations by the editorial staff of AMERICAN MEDICINE. They will take up a wide variety of topics and, we hope, will prove of interest and help to our readers.

so many of the preparations that have sought the favor of the medical profession have proven practically worthless that there has been great danger that those of real merit would be overlooked or passed by.

In view of this and the unfortunate consequences if, for instance, vitamine products which are really valuable and useful should not receive the recognition they deserve, the time is ripe for an investigation of the whole subject from an unbiased, scientific point of view. Any one interested in the topic, and this must needs include all practicing members of our profession, would do well to write for a copy of *Bulletin 240* to the Connecticut Agricultural Experiment Station at New Haven, Conn. This is their twenty-seventh report on food products and drugs, and records the details of an investigation of commercial vitamine preparations carried out by E. M. Bailey, H. C. Cannon and H. J. Fisher. It is just such a government institution to whom one may look for an impartial and unprejudiced statement of facts. Perhaps the arbitrary attitude of some of the self-appointed therapeutic dictators has been a factor in encouraging a few sensation mongers to launch a general attack upon the American medical profession and to hold up to ridicule their efforts to help their patients by empirical means where science fails. The recent impudent attempt of a layman in a lay magazine to help the dictators dictate, is still fresh in our memory.

It is well to turn from this atmosphere of medical and commercial politics to the results of a scientific study. Bailey and his collaborators employed three animals for every set of experiments to exclude the chances of individual idiosyncrasies. In fairness to the manufacturers several fresh samples of their products were used to

avoid vitiating the investigation by accidental deterioration or lack of uniformity of any given preparation.

In every instance the criterion of activity was the growth obtained within a given period after experimental vitamine starvation had been brought about. To achieve this, young rats were placed in individual cages and supplied with a normal food supply which, however, was lacking in water-soluble B vitamine. The therapeutic administration of the various products was commenced as soon as the animals showed a persistent and conspicuous decline in weight. It was found that the majority of the preparations on the market failed to pass the test. On the other hand, it is gratifying to note that there are dependable products available which fulfil the claims made on their behalf even when subjected to the rigorous tests and controls of the laboratory.

The time has come for us to form a clear picture in our minds as to the vital significance of vitamines. We must strip the subject of all exaggerations with which it has been surrounded. We must also avoid very carefully to make the even more unforgivable mistake of decrying the remedial employment of vitamines and of denying their obvious proven value for no other reason than dictatorial commands or personal prejudice. It is not suggested that a carefully chosen diet of the mixed type now advocated by all sane dietitians, does not contain an adequate supply of vitamines. At another place in this issue we refer to the valuable properties of fresh fruits and their richness in certain vitamines. But a moment's reflection will show that the diet cannot always be perfectly balanced. There is popular ignorance, there are economic difficulties which lead to partial and vitam-

ine starvation far more frequently than imagined by the uninitiated. We have the capricious appetite of the convalescent and the perverted food habits of many a society dame. We all are familiar with the feeding difficulties in digestive disorders and other diseases. The list of the utility of dependable vitamine preparations could be extended indefinitely, starting with the needs of the growing baby and ending with the support of the failing metabolism of old age. Enough has been said to rescue the subject from the scrap heap to which confusion, exaggeration and detraction have condemned it. We consider that the *Bulletin* of the Connecticut Experiment Station is a valuable contribution to practical medicine and should be read by every physician who is interested in the problem of vitamines, especially their value in the treatment of nutritional diseases.



Pluriglandular Aspects of Female Gland Function.—Servale Vincent in the *Boston Medical and Surgical Journal* (February 11, 1922) takes the view that the quality of femininity is dependent upon the manifold activities of all internal secretions, including the adrenal glands, the thyroid, and the pituitary and not alone upon the hormonal service that the ovaries may render to the body. The adrenal cortex exerts important functions connected with the development and growth of the sex organs, for hypertrophy of the cortex is frequently associated with abnormal sex manifestations. Tumors of this structure in the female have been related to development of male secondary characteristics and hypoplasia of the internal generative organs. The adrenal cortex is enlarged during breeding and pregnancy. The thyroid is important in this complexity. This organ is relatively larger in women than in men,

and commonly increases in size during puberty, menstruation and pregnancy. Removal of the ovaries may cause an increased activity on the part of the thyroid, whereas a lessened ovarian activity may be a cause of severe exophthalmic goitre after the menopause. The pituitary gland thru its action on many metabolic functions underlying puberty is here of influence. The pineal gland has an influence on sexual precocity. The thymus in its physiologic cycle has a distinct influence on gonad activity. The psychologic characteristics of women are, according to Servale Vincent, dependent on social conditions, but of those more fundamental, some depend on the influence of the ovaries and others are largely conditioned by the general reactions of the internally secreting glands.

Alcohol and Tobacco and Endocrinial Sex Function.—In a recent discussion of what it termed transitory sexual impotence in young conscripts, Dr. Julio A. Lopez (*International Digest of Organotherapy*, December, 1922) of Argentine, found it was most frequent in those who had been great smokers from an early age and who were heavy drinkers. In his view, inordinate smoking and drinking, especially distilled drinks—"white drinks" as they are called—constitute the more important causes of these transitory types of sexual impotence. He cites the case of a young conscript who arrived at a point where he drank as much as a bottle of absinth every day, which resulted in absolute frigidity of the sexual organs, a condition, however, not permanent. Alcohol and tobacco exert an influence on the testicular glands, especially on the functions of the interstitial cells. These products not only modify the internal and external secretion of the testicular gland, but also that of the thyroid, parathyroids, adrenals, etc., consequently affecting the tonicity of the sympathetic nervous system.

The Adrenalin Content of the Blood and Its Relation to Vasomotor Instability.—The adrenalin content of the blood, according to Lapham (*Medical Woman's Jour.*, December, 1922), does not seem to be al-

ways constant nor the influence which it exerts upon the vaso-constrictors always steady and even. Very often the vaso-motor disturbances of the menopause are associated with an unstable blood-pressure which changes rapidly even from hour to hour so that it should be followed as faithfully and charted like a temperature curve. In some cases there seems to be a sudden, excessive, wave-like spasmotic action of the vaso-constrictors which is apparently caused by what may be called surges of adrenalin force. Zondek has very convincingly shown that the hot flashes, the cerebral distress, the paroxysms of suffocation and other vaso-motor disturbances of the menopause are manifestations of splanchnic instability. There seems to be surges of adrenalin force causing waves of vaso-constricting stimuli to pass over the splanchnic circulation with spasmotic contraction of the splanchnic vessels which drives the blood violently upwards, distends the cervical vessels, crimsons the face and causes an intolerable feeling of pressure in the head. Then the spasm relaxes, the blood rushes back into the splanchnic vessels, the head feels queer and there is a sensation of extreme weakness and collapse with often violent sweating and pallor. Pal vividly describes the vascular crises occurring in vascular districts such as those of the kidney, liver, splanchnic area and the brain. These vascular crises of Pal seem to be spasmotic contractions of the vessels belonging to any organic function, and by these excessive spasmotic contractions they cause violent pain in the nerves of the vessels which we call colic. Pal says that before the pain comes on there is a marked rise of blood-pressure followed by the colic and then by a rush of blood up into the brain. When this constriction by the sympathetic causes pain along nerve tracts and along the course of the blood-vessels compressed, we are apt to call it neuralgia, neuritis or sciatica and surgeons are relieving these excessive constrictions by slitting the peri-arterial sympathetic connections. When these constricting influences are persistent and severe enough to cause persistent contractions of the vessels, the conditions characterizing Raynaud's disease may develop. Anginas, both real and genuine, and the distinction is one of degree rather than of difference, are constantly associated with Raynaud's disease so that we are coming to believe that

paroxysmal tachycardia with its attacks of suffocation and pain and angina pectoris are manifestations of excessive stimulation of the sympathetic by adrenalin.

Basal Metabolism in Thyroid Cases.—

Means and Burgess (*Archives of Internal Medicine*, October, 1922) assert that patients with an outspoken clinical picture of hyperthyroidism invariably show increased metabolism and those with definite clinical pictures of hypothyroidism invariably show decreased metabolism. Those with goiters, but no sign or symptoms of abnormal thyroid function, for the most part show normal or abnormal metabolism. The majority show normal metabolism. By interference from the indirect evidence the authors believe that in these borderline thyroid cases, provided that in the first place a true basal rate is secured, and, provided that certain well-recognized causes for increased metabolism, such as fever, acromegaly, leucemia and severe anemia are excluded, the finding of an increased basal metabolic rate is strong presumptive evidence of hyperthyroidism. In a similar way, provided that such conditions as starvation, hypopituitarism, and hyposuprarenalism are excluded, a low metabolic rate is strong presumptive evidence of hypothyroidism. To that extent, then, the metabolism test is distinctly useful in differential diagnosis. Like all other laboratory tests it should only be interpreted with due regard to all other clinical and laboratory findings, and with due regard for its limitations and pitfalls.

The Question of Organotherapy.—

Organotherapy, which has come chiefly to signify the treatment of disease or conditions of ill health by preparations derived from the internal secreting, excreting or in creting glands, is a burning question of the day in medical circles, and to a lesser extent in lay circles. It is difficult at present to sift with any degree of discrimination "the wheat from the chaff." That is to say, to state definitely or nearly definitely the preparations which are of value, and which are useless—with the exception of those

to which reference will be made later. Therefore, a discussion on the subject by the chief British authorities which took place at a meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine held in London on January 9 last, will tend to clear the air. The meeting was under the presidency of Dr. Langdon Brown, one of the first British endocrinologists, Professor Swale Vincent now of London and formerly professor of physiology at the University of Manitoba, opened the discussion and subjected the present position of organotherapy to severe criticism. While allowing that thyroid and parathyroid medication was of value, that of the thyroid especially, Professor Vincent expressed the hope that before long we would be enabled to include the pancreas in the same category.

Professor G. R. Murray of Manchester, who discovered in 1891 that the administration of thyroid substance cured myxedema, followed Dr. Swale Vincent. He said, in part, that certain lines of treatment by organotherapy were based on sound physiologic principles and had proved of great value. He thought that the term "organotherapy" should be confined to the employment of the products of the excretory, secretory and incretory glands in the treatment of disease, other tissues should be regarded as foods rather than as drugs. Professor Murray spoke favorably of the therapeutic properties of preparations of parathyroid, suprarenal and pituitary glands and further pointed out that the discovery of a method of making an efficient extract of the islands of Langerhans suggested that further researches might yield new and useful therapeutic agents from the endocrine glands and teach us how best to employ those already in our possession. It may be mentioned here that a London man, Dr. Mackenzie Wallis, claims to have prepared a pancreatic extract which is effective when given by the mouth. Dr. W. R. Grove, who, together with Dr. H. Vines, has been treating cases of gastric and duodenal ulcer, phlebitis, diseases of the rheumatic group and many other diseases of septic origin in patients whose blood was deficient in calcium by parathyroid therapy, concluded that parathyroids had a definite remedial action in all the chronic diseases accompanied by a calcium deficiency, which

is simultaneously improved or brought to normal. Dr. H. Vines said that in all the various diseases improved by parathyroid therapy the underlying condition was sepsis. He believed the action to be a stimulation of leucocytes, probably indirectly thru the action of calcium on blood plasma. Broadly speaking, he believed the use of parathyroids increased physical resistance to bacterial disease. Dr. Langdon Brown pointed out that clinical evidence showed that some progress was being made.

While all who have the true interests of glandular therapy at heart cannot but deprecate the fact that occasionally extravagant claims are made for organotherapy, yet at the same time it is obvious that organotherapeutic treatment is becoming established on a sound basis, and is slowly but surely progressing. It has been conclusively proved that thyroid substance is effective by the mouth; why, then, should other glandular preparations, if properly prepared, not be effective also used in the same way? As noted above, Dr. Mackenzie Wallis claims to have discovered a pancreatic extract effective when orally administered, and there is no valid reason to believe that his claim and the similar claims of other investigators, notably Dr. Harrower, in the field of glandular therapy should not be based on sound premises. It is true that this form of treatment is as yet not long past its infancy, and in any event, is not beyond its adolescence, but it is a youth of infinite promise and great possibilities. It is certainly most encouraging to learn that by means of parathyroid therapy sepsis may be overcome, and this, in spite of the fact that the reason for its favorable effect on calcium content of the body is not known. For the present it is sufficient to know that it does act in a strikingly remedial manner when diseases of septic origin are present, by replenishing the deficient calcium content. Indeed, the position of organotherapy is quite satisfactory in that it promises to be perhaps the most effective factor in the therapeutic armamentarium in the fight against many diseases.

Healthy skepticism does good, critics are needed, but criticism should be perfectly fair or it will defeat its object. It should be remembered that, after all, clinical evidence is the most reliable, and it often

happens that practical results confound the findings of the laboratory. This is not to say that experiments and scientific investigation are not necessary, but it is intended to emphasize the point that too great reliance must not be placed on them. It may not be rash to predict that quite as brilliant results will follow the use of other scientifically prepared glandular substances as have followed the employment of thyroid, adrenal and pancreatic extracts.

By-ways and High-ways

The Passing of the Country Doctor.—The following beautifully written article by Ivor Griffith in the *Eclectic Med. Journal* (February, 1923) is so rich in timely truths that we feel it is a duty to reproduce it for our readers.

A lonely road leading into gloomy hills; a dreary, unpromising road that offers but little joy to the weary traveler who would plod its uneven way to reach his destination. A bleak landscape robbed by chill November of all its charms of other days. Rain, cold rain, beating, drizzling rain, that seeps and soaks and permeates thru every known protection. And over the sodden road, swinging from rut to puddle rolls an old-fashioned four-wheeled buggy, drawn by a tired horse.

The animal, weary with lifting its weighted hoofs out of the gummy mire, wanders along with an enduring patience and dangling reins that rarely jerk to tightness, tell the story of the driver's total trust in good old Dobbin's judgment. Behind the black oiled canvas that drapes over the front of the carriage sits the driver, the country doctor, silent in contemplation, and changing his posture only rarely and then to ease a tired muscle or soothe an aching joint. The whinnying winds blow bulging pockets in the carriage coverings, and tall cedars, lone sentinels of plebeian boulevards, grudgingly sway their tips in the swirling air currents, as over the bending roads these children of the storm pursue their tedious mission.

Soon they come to the foot of the hills, where lack of timber tells the tale of a

hardy pioneer's clearing. And just below the timber-line is the end of the journey, the little cabin whence came the call that brought the doctor to his duty. The buggy stops under a covered shed, and the master of Dobbin steps down, ties his faithful steed to a hitching post, and walks on toward the lowly cabin. In his hand he carries a small leather case, his *vade mecum* in emergency, laden with precious balms and healing lotions. In it are little vials filled with murky concentrations, potent antagonists of human dissolution, pellets and pills fashioned in a pharmacy and designed from an expansive *materia medica*. The bowels of the earth, where the minerals lie, and plants that grow upon its face; animals that roam the green fields, and the creatures that creep upon the unploughed wilderness, all have contributed to this small store of healing agents—the contents of the little black grip. Aloes from darkest Africa; India's choicest poppy juice; essence of the Jesuit bark from hot Peru; gums and aromatic oils from Araby; bitter rhubarb from China land; herbs and leaves from the little Emerald Isle; mellow oils from sunny France; made up mulls from German mills; the wealth of America's drugs—all of these and more are in the little vials and bottles that comprise the fighting armamentarium of the honest old doctor of the countryside.

Follow him into the cabin. Waiting for his coming is the mother; mother of the hill-side cabin; mother of the better America; mother of men who have come from the mountains to mould the destinies of a great nation; mother of men who have come with the abiding strength of the cedars and the sturdy reliance of the great oaks to lead their nation to pinnacles of liberty and to the feet of God; mother of Lincoln, of Garfield—that is the mother of the cabin at the foot of the hills.

And waiting at the door for his coming is this mother, whose first-born child is ailing, the child whose racking pains he comes to quiet or mitigate. The lines of her loving face, the eager hopeful stare of her tired eyes give mute testimony to a long and loyal vigil at the bedside of the little sufferer. Her tale of the patient's plight is soon unfolded, and the doctor goes on to the bedside, where the anxious, care-worn father, son of the soil, also keeps his vigil. The father rises and greets the doctor with the customary respectful silent handshake

and retires to the shadows to watch with hopeful eyes the man who brings confidence back to his heart, and assurance that Death shall not come by his threshold to claim the first-born son. Upon the humble cot lies the troubled infant, sick almost unto death. His little Cupid face, that but yesterday gleamed with ruddy colors from Nature's own palette, and carried the smile that knows no guile or pain, today burns consumingly in the torrid heat of the fever furnace. The little lips that yesterday pouted in happy contentment are now convulsively moved in painful grimaces. The eyes that before danced in innocent ecstasy today are palled and heavy. Life in him finds little room and time for ornament and expression; it only seeks the right today to exist in the frail little vessel which Death would shatter and destroy.

To him comes the doctor, the old country doctor, that steady enemy of over-eager Death. And Death finds in this country doctor no mean antagonist. For tho he fights single-handed, he fights with faith and open confidence, and his weapons are keened in experience and strong with steady use. Beside the bedside he sits now in pensive thought. He watches the patient from a background of a long and rich experience. Gently and painstakingly he proceeds to build his chain of tests and trials that will prove the nature of the grim disease. His stock in trade of laboratory adjuncts is the little glass instrument that records the fever's reaction, and the disc of taut celluloid that he presses over the heaving breast and connects with his own ears. He hearkens to the little heart's wild beatings as it speeds in reckless pace to counteract the stifling toxins that would press its life away.

Thru the pitter-patter of the raindrops upon the shingle roof he listens knowingly to the message of his deftly handled stethoscope. A measure then of the wrist pulsations, the ominous taps upon the heaving chest, a searching glance into the inflamed throat, the careful lifting of a heavy eyelid —these are the laboratory tests of this gentle man of science. Now and again a soft spoken question to the parents, and then some more percussion. Finally comes the diagnosis. No need has he of smeared slide or oil-immersed lens, no loop or needle, blood or agar slant. His clinical laboratory is in and on his finger tips. Tension of alveolar air need find no record here by way

of colorimeter or complicated tools. The child's dyspnea is "sign complete" to him of acid hunger. The apple-scented breath is proof enough of ketone crises. The fleeting heart, the creaky bronchioles, the rasping, unproductive cough, the damming of the lungs, proclaim to him in louder tones than all the tests of science. Pneumonia he calls it, and pneumonia it is.

Thus out of the maze of indifferent, confusing, misleading symptoms he unwittingly but unfailingly picks the presenting symptoms and goes on to the diagnosis. He cares not what numerical type the infection might be, nor what the "blood count" registers. Let the leucocytes carom in merriness and unnumbered as long as they attend to the business in hand. Let the mild-mannered guinea-pig and long-tailed mouse comfort and serve his more exacting brother practitioner in the scientific city, who wastes precious moments in confirming diagnosis when life may refuse to spare the time and wait.

In the cabin he is done for all time with the diagnosis. His is now the business of treatment. Carefully he opens the cabin windows in spite of beating rain. Out goes the humid mustiness of the heated indoors, and in comes the air of the highlands, clean with the fragrance of moist pines and spicy cedars. The old doctor now turns to his peripatetic dispensary and selects with evident care the weapons with which to fight the dread disease. Into a willow cup, half-full with crystal water, he measures the chosen tinctures. Then, when well mixed, he hands it to the mother, and with very definite instructions bids her to be regular in its administration. An admonition to keep the patient warm and quiet and free from draughts terminates the visit. The doctor picks up his top hat and his precious medicine bag, and without ostentation hurries back to Dobbin and his other sick patients.

Not a word of hope or a promise to return has he left with the eager parents, but they know full well that he comes again tomorrow. In him amply rests their every hope. Well they know that if human skill can restore their only child to a measure of health again, his welfare rests in able hands. Their faith in the old doctor is sublime and beautiful. So they return to their vigil with fervent prayers on their lips and fulsome hope upon their breasts. And a listening,

willing God sees to the fulfillment of their every hope.

That is the picture—in the backwoods of Kentucky, in the rolling plains of Michigan, among the pines of Pocono, along the shores of Maryland, out in the torrid sun of the prairies, in the broad wastes of the Texan sands, where the mesquite blows down Mexico way, between the snow-clad peaks of bleak Alaska—everywhere that men gather and rear their families—everywhere that sickness parades thru human habitations.

The picture is no idle fantasy. But it is a picture that increasingly loses its reality. It is a picture that is soon to pass into oblivion.

For the leaders in medical training today have mapped for students of the profession an education that turns them out of the service of rural communities into the more specialized and easier task of attending to the bodily welfare of city dwellers. The road of the country doctor is too hard for them to travel, and there is little incentive for the highly trained graduate to seek his duties along the lonely trail that leads into gloomy hills.

The men presently responsible for medical training have scrapped without mercy the smaller schools that gave these countrymen their basic training. They have made it impossible for the smaller colleges to function, deliberately wrecked them—now the pendulum swings back again. The reaction from the insane super-standard prerequisites is being felt. Men and women of the countryside have as much right to demand ready medical service as their brothers and sisters in town and city. And medical attention they will have.

Listen! Here is the message of the president of a large university delivered to a recent gathering of medical alumni: "We have made the great mistake in medical education, we have set the standards uniformly high. We have throttled the lesser schools; we have failed to appreciate that we could not supply the demand for practicing doctors if we insisted on the rigid enforcement of our educational prescription. Let us go back to the lesser schools and give them the right again to train our doctors. We used to say that small schools did not turn out good doctors, but only half-trained doctors. But today we admit that half a doctor is better than not a doctor at all."

We take no issue with this gentleman's

viewpoint, even if we do know that not all half-trained doctors have come from the smaller schools.

But we do feel that he has heard the call of the backwoods in Kentucky; he has sensed the cry of the sickly child and the beck of the waiting mother of the hillside cabin, and he knows that unless the bars are soon lowered there shall some day be no one to answer to the frenzied call.

He has seen the progress of the quack, the filling coffers of the charlatan—the isms, the cults, the paths and ics, and he knows their menace to honest medicine.

He has seen the writing on the wall, and he understands its meaning.

Advice to Young Physicians.—The great Benjamin Rush in a lecture to his students on February 7, 1789, among other remarks calculated to aid young doctors in practicing their profession, offered the following advice which well may be listened to today (*The Urologic and Cutaneous Review*, January, 1923):

Avoid singularities of every kind in your manners, dress, and general conduct. Sir Isaac Newton, it is said, could not be distinguished in company, by any peculiarity, from a common well-bred gentleman. Singularity, in anything, is a substitute for such great or useful qualities as command respect, and hence we find it chiefly in little minds. The profane and indelicate combination of extravagant ideas, improperly called wit, and the formal and pompous manner, whether accompanied by a wig, a cane, or a ring, should be all avoided, as incompatible with the simplicity of science, and the real dignity of physic. There is more than one way of playing the quack.

Permit me to recommend to you a regard to all the interests of your country. The education of a physician gives him a peculiar insight in the principles of many useful arts, and the practice of physic favors his opportunities of doing good, by diffusing knowledge of all kinds. It was in Rome, when medicine was practiced only by slaves, that physicians were condemned by their profession *mutam exercere artem*. But in modern times, and in free governments, they should disdain an ignoble silence upon public subjects. The American Revolution has rescued physic from its former slavish rank

in society. For the honor of our profession it should be recorded that some of the most intelligent and useful characters, both in the cabinet and the field, during the late war, have been physicians.

Let me advise you, in your visits to the sick, never to appear in a hurry, nor to talk of indifferent matters, before you have made the necessary inquiries into the symptoms of your patient's disease.

Avoid making light of any case. *Respic finem* should be the motto of every indisposition. There is scarcely a disease so trifling that has not directly or indirectly, proved an outlet to human life. This consideration should make you anxious and punctual in your attendance upon every acute disease, and keep you from risking your reputation by an improper or hasty diagnosis.

Do not condemn or oppose, unnecessarily, the simple prescriptions of your patients. Yield to them in matters of little consequence, but maintain an inflexible authority over them in matters that are essential to life.



London Letter

(From Our London Correspondent.)

Clean Milk.

The question of milk is greatly exercising the minds of members of the medical profession and of the public at the present time in this country. The public thru ignorance have never realized the importance to the health of the community of a clean milk supply. To a lesser extent neither have the medical men. The fact that the well-being of infants and children depends largely on a pure or comparatively pure milk supply is now beginning to seep into the brains of the British lay population. Medical men and especially medical officers of health, specialists in infants' and children's diseases, and those who are concerned in infant welfare centers are becoming alive to the urgent necessity for improving the milk supply. Medical visitors to America invariably come home deeply impressed by the superiority of American over

British methods for insuring a comparatively unpolluted, uninjected milk supply, altho many are not convinced of the merits of pasteurization. But they do insist that the means in vogue in America, of cleanliness during milking, of methods of transport and of distribution, are infinitely superior to those employed in this country. Some years ago a correspondent of the *Lancet* who had lived several years on your side of the Atlantic and who had made a fairly close study of the conditions as regards the care of milk, contributed a series of articles on the subject. He investigated the transport of milk by rail to London, the distribution and state of the shops in which milk was sold and stated unhesitatingly that compared with America the conditions as to care of milk in England were slip-shod and out-of-date. There has been some improvement, but a long distance will have to be traveled ere the standard of America will have been reached. At a meeting of the Liverpool Medical Institution held on December 21, 1922, Dr. Dobbin Crawford read a paper on clean milk. She said that America was the pioneer of the clean milk movement. In England the National Clean Milk Society was founded in 1915, with the following objects: (a) To examine the condition of milk as received by the consumer; (b) to furnish a standard of clean milk; (c) to create a demand for clean milk. It was found in 1915 that the average sample of London milk contained more than 3,000,000 bacteria per c. cm. Tubercle bacilli were present in 10 per cent. of the samples and over 99 per cent. contained bacillus coli, absolute evidence of contamination with manure. A standard of clean milk was furnished in the licenses issued by the Ministry of Health in 1921 for the production of Certified Grade A milk, which must contain no *B. tuberculosis*, no *B. coli* and not more than 30,000 bacteria per c. cm. at any time before reaching the consumer. It must be delivered within two days after the day of production, and every animal in the herd must be examined by a veterinary surgeon and given a negative reaction to the tuberculin test at intervals of three months.

Dr. Crawford then gave the following statistics of Liverpool milk, which were quoted from the report of the public health department of 943 samples examined in 1921 from 9 to 15.6 per cent. contained

tubercle bacilli. The veterinary inspectors in 1921 found 31 cows with tuberculosis of the udder supplying milk to the city. From 80 to 90 per cent. of the samples tested contained *bacillus coli* and in that year diarrhea and enteritis killed 693 infants in Liverpool. Dr. Crawford considered that the practical effect of grading milk was rapidly to raise the standard of the whole milk supply; it tended also to increase the consumption of milk. The cost of certified milk was $7\frac{1}{2}$ d. (15 cents) a pint, just double that of ordinary milk. The need of the moment was the education of the consumers so as to increase the demand for clean milk.

Very much less milk is drunk in Great Britain than in America and the quality is not nearly so good. The question is most serious, as the production and distribution of a good and clean milk are most important factors in the healthy rearing and upbringing of infants and children, and in the maintenance of their health.

Post-Graduate Training in Great Britain.

Post-graduate medical training in London has sadly hung fire. After the Armistice, steps were proposed to make of London a great post-graduate medical center, and amid a great flourish of trumpets somewhat ambitious schemes were set forth with the promise that these would be fulfilled and that London should take her rightful place as the chief post-graduate medical center of Europe in place of Berlin and Vienna. Special preparations were to be put forth to induce American medical graduates to make of London their medical Mecca. An American club and hostel were to be established and it was even proposed that an American hospital should be built and endowed. However, the effort lagged; there has seemed to be a lack of enthusiasm for the project among the medical men of the metropolis and in consequence both money and organization, two essentials for success, have been wanting. Perhaps the death of Sir William Osler, a prime mover in the scheme and who worked enthusiastically for its attainment, hindered its course. However, there are signs now that while belated, the scheme or a modified scheme may come to completion after all. At any rate during the past year a distinct advance has been made. In February last, Sir

Alfred Mond, then Minister of Health, announced that the Rockefeller Foundation had offered a sum of \$2,000,000 towards the cost of building and equipping a Post-Graduate School of Hygiene. The only proviso laid down was that the British Government should undertake the responsibility of meeting the cost of staffing and maintenance of the school when established. On behalf of the Government, Sir Alfred Mond gladly accepted the offer and to some extent the money difficulty seems to have been overcome. But the decision of the Ministry for the utilization of the sum promised has not yet been made, and further delay is likely to result from the change of Government and from the fact that the successor to the late Minister of Health was rejected by the Constituents. However, the delay cannot be long and a post-graduate scheme for London will soon come into effect.

Infants' Hospital in London.

For many years there has been an Infants' Hospital in London, of which, tho of considerable size, little has been heard. In the future, it is safe to predict that more will be heard of this important institution, as a new medical director has been appointed recently. The director in question is Dr. Eric Pritchard, one of the first British authorities on the care and treatment of infants—a man of original views, who has already shown his power of organization and his successful methods in the feeding and rearing of infants at the Mary Lebone Dispensary. Dr. Pritchard also was the first to introduce Infant Welfare Centers for the care of mothers and infants, modelled after those of Ghent, into Great Britain. The buildings of the Infants' Hospital are situated in Vincent Square, a delightful open space behind Westminster Abbey. The location of the institution is ideal. It looks over a beautiful square, but in its neighborhood are some of the worst slums of London and in consequence many infants who badly need treatment and care. The present buildings were opened in 1907 and completed in 1914. They were erected at the cost of Mr. Robt. Mond, brother of the late Minister of Health, as a memorial to his deceased wife. The architect was Mr. Robert Reed of Cork St., London, W. The

buildings are quite in keeping with its immediate surroundings. The main building is picturesque, the large wards overlook the square and internally it is conveniently arranged and in every respect adapted admirably for the purpose for which it was intended. The original object of its founder was not only that it should be used for the scientific treatment of infants suffering from the diseases and disorders of nutrition, but that it should be a training school and center of research. It is the aim of Dr. Pritchard and those responsible for its management to make it an institution for the treatment of infant diseases generally. Moreover, and this object is one upon which the new director lays especial stress, it is proposed to carry out the original idea that the hospital should be a center for research work and for the training of nurses and students as well as for health visitors.

The hospital proper contains fifty cots, a magnificent lecture theater, excellent facilities for open-air treatment, a milk laboratory, and in England at any rate, a somewhat unique feature, 20 separate rooms or wardlets, which can be used for isolation purposes or as private rooms.

The out-patient department, which occupies a separate building, is commodiously housed. In addition to a large out-patient department, consulting rooms and dispensing rooms, there is ample and good accommodation for the nursing staff under the direction of a highly qualified woman, who has had wide experience in welfare work. This building also contains a really magnificent research department, X-ray room, indeed, all the facilities for research work.

In short, the hospital is fully equipped for the purpose of affording medical practitioners adequate opportunities to study in a practical way as well as from the laboratory standpoint the important questions involved in infantile malnutrition. It is proposed to take nursing mothers into the hospital as it is realized that no system of teaching would be complete—dealing with artificial feeding alone. These would be placed in separate little wards together with their own babies. A small number of maternity cases would also be taken in so that the students might understand the importance of feeding in the earliest days of life. A limited number of surgical cases would be treated as in-patients and there would be three monthly courses of infant

work for midwives. Lectures on all matters connected with infant feeding are delivered at the hospital to nurses, health visitors, infant welfare workers and others interested in the study of infant life.

Dr. Pritchard began a new post-graduate course on infant and child welfare at the hospital on January 15 at 6 P. M. Dr. Pritchard is making during the year a special feature of his clinics which are, in fact, "Round Table Consultations." Post-graduate students will have the opportunity of joining in the discussion on difficult cases sent in by medical officers of welfare centers as well as by practitioners. It was hoped in the near future to open a prophylactic tuberculosis department which will probably be conducted by Dr. Pritchard himself. A perusal of the foregoing account will convey to American readers who may think of taking a post-graduate course in Europe an idea of the opportunities afforded in London for pursuing investigations with regard to the treatment and care of infants. Also for infant and child welfare workers in America who are making a visit to England, the Infants' Hospital in Vincent Square should prove an unfailing source of instruction and interest.

The Centenary of the *Lancet*.

In October of this year the *Lancet* will have completed 100 years of existence. During this long period both medicine and surgery have made great strides, and Pasteur and Lister, the outstanding figures of the medical world of the past generation, made discoveries and applied the same, thereby changing to a large extent the character of medicine and surgery. The *Lancet* may be regarded as the foremost representative of the course and advance of medical journalism, both on account of its age and the manner in which it has been conducted. It has recorded medical news from all parts of the civilized world, and in the country of its birth has been largely instrumental in the introduction of several much-needed reforms.

Drug Habit Among Members of the Medical Profession.

At a recent meeting of the Medical Society of London, it was stated that drug-taking was prevalent among medical men

in this country and that this habit was due to the strain and stress of modern medical practice. However, in the *Times*, January 13, this assertion was strongly rebutted. It may be said that the charge of taking drugs has been brought against medical men more or less frequently. It certainly is true that the mental and physical strain of a busy practice brings about occasionally a condition of mind and body in which rest is craved for. Certain drugs by inducing forgetfulness do bring about a kind of rest, at any rate, the mind is relieved for a time from a state of tension which has become almost unbearable. On the other hand, no one knows better than a medical man that this relief is but temporary and that if the drug habit be contracted that, as a rule, the results are disastrous. There undoubtedly is an increase of drug-taking within recent years, but it is unlikely that it is any more prevalent among medical men. The doctor is more in the limelight than the ordinary citizen, and his lapses are consequently more liable to be discovered and exaggerated than those whose lives are less open to scrutiny.

Maternal Mortality in Great Britain.

In all civilized countries maternal mortality is high—higher than it should be and this country is no exception to the rule. It is told that at a scientific discussion in Paris a speaker stated as his firm belief that the morbid agent of childbed fever would never be seen or known. Pasteur, who was present, rushed to the blackboard, made some hieroglyphics on it, and said: *Tenez, voici sa figure.* He had discovered the particular streptococcus which is the infective agent of puerperal fever. Splendid results have followed, that is, in institutions in which means for preventing the infection have been scientifically carried out, and in which all resources at the call of medical science have been employed to safeguard the patient. But in spite of these facts, the death rate from this cause in Great Britain is still unduly high, notably, too, from puerperal fever. Indeed, altho steps have been taken and are being taken to safeguard the parturient woman, the new midwives' bill was passed a few months ago to ensure a high and generally available standard, the returns from these efforts up to the present have been wholly

inadequate. The question is now being asked whether the teaching of obstetrics has been or is satisfactory. Many well-known obstetricians declare that it never has been satisfactory and the assertion is not too strong to make that this important subject has never received, nor receives today in any medical school of this country the time and attention which it assuredly deserves. Perhaps, as a rule, there is too great haste to get it over, but the conditions under which this surgical procedure is frequently done are not favorable to a successful issue. However, more vigorous efforts than ever before are to be put forth to render childbirth more safe. Students are to be more thoroly trained in obstetrics and it is said that maternity centers are to be established thruout the country. It is a scandal and disgrace to allow matters to continue as now. It is, at least, encouraging to know that Sir George Newman, the chief medical adviser to the Ministry of Health, is keenly interesting himself in the subject and that ere long practical steps will be taken to improve the situation.

A Minister of Health.

At the present time, while nominally there is a Minister of Health, Sir Arthur Boscawen, who was appointed just before the general election and failed to retain his seat in Parliament, *de facto* the post is vacant, as it must be held by a member of the Government who, of course, must be a member of Parliament. The election took place two months or so ago; we are now half-way thru January and no seat for him has yet been found. There have been soundings for him in several constituencies, but either the sitting members have not been inclined to move or the local organizations have raised difficulties. Sir Arthur Boscawen is an able man, but having already lost three seats for his party, and not having been a success as Minister of Agriculture, he has acquired the fatal reputation of being a political "Jonah," and party organizers have come to regard him dubiously as a candidate. Therefore, if he is unable to find parliamentary rest for his feet soon, he will probably resign from the Ministry of Health, that is, if a refuge is not found for him in the House of Lords. It has been suggested that a medical man

might be found among the present medical members of the House to fill the post. It is time that the first head of the Ministry of Health was a medical man who did not shine, but that is no reason why one of the band of medical members should not be equal to the task of satisfying the public and medical profession and last, but not least, the politicians. It is said that medical men are not good business men, and doubtless, as a rule, there is some truth in this statement, but some of the medical men now in Parliament have proved their business aptitude. It is more than likely that the reason that one or all of these should be passed over, is because the medical profession wield no power politically and also there are many faithful political henchmen who have a prior right to the loaves and fishes from the party standpoint. To the victors belong the spoils and interests of party come before the interests of the general public. Until the community at large have been taught to recognize and appreciate the value of health and the reasons for the means put forth to gain this aim, the medical profession will be regarded generally with indifference, tinged with a certain amount of contempt. Science, and medical science especially, if it calls for the expenditure of money, is looked upon with distrust by the man in the street—a matter concerning which a person if ignorant is usually viewed with distrust. Measures, regarding which the public is ignorant, taken in the interests of health, are put in the category of vexatious and unnecessary. After all, the voters have the political power and until the public are educated to understand the value of laws to promote health, the medical profession will not be power in the land. The time is not yet in sight.

Subcutaneous Ether in Pertussis.—
Rocco Mancinelli, in *La Pediatria*, September 1, 1922, p. 801, reports satisfactory results from the subcutaneous injection of ether in whooping-cough.

One c. c. was used in the first year of life, $1\frac{1}{2}$ c. c. in the second year, and 3 c. c. in the third year. Injections were given every other day, the number varying from 5 to 10. Marked improvement was found in 38 out of 61 cases.



Too Much Weighing and Measuring.

To the Editor,

AMERICAN MEDICINE,
New York City.

Dear Sir:—Your remarks on "Too Much Weighing and Measuring" strike in me a responsive chord. They bolster up my long-time contention with the local school authorities, that these procedures are valuable only as showing, from the beginning of one semester to another, proportional gains respectively, or the lack of them. When proportional gains can be recorded the pupil passes muster; when they cannot be recorded there is either improper feeding, or the school work is too heavy for that mentality. Your comments on "Science and Religion" are also timely. There is pending in the Iowa Legislature a "Bill to Prohibit the Teaching of Evolution in the Schools Supported by Taxation." The resolution, which you quote from the Council of the A. A. A. S., comes in handy for our opposition to such an enactment.

Respectfully yours,

H. B. YOUNG.

Bee Stings.

ROSWELL, NEW MEXICO.

To the Editor,

AMERICAN MEDICINE, New York City.

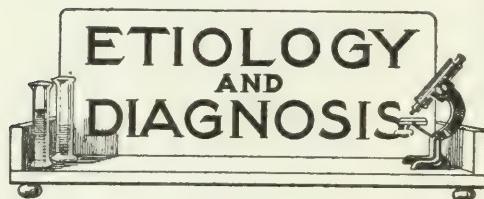
I have recently had an experience which to me appeared so violent and almost unexplainable that I would like to state it in the hope that some one with more experience in such things may offer an explanation.

I occasionally do some work with bees and also occasionally am stung by them. About a week ago I was stung in the side of the head by a honey bee. I was wearing a pair of leather gloves. Within one or two minutes the palmar surfaces of both my hands began to burn. Within another minute the burning and itching was so furious that I took off my gloves and scratched and rubbed my palms almost frantically. I found that did no good and fearing I might do some damage to my skin, I washed them, using a cake of sand soap. That did not help at all. I used a stiff brush with little result. I finally calmed myself sufficiently to lie down, resting my elbows on the cot beside me and held by hands quietly in the air to see whether I had self-control and fortitude enough to contemplate the condition without further action. I must confess it took all the will power that I possessed to thus lie still and hold my hands still. However, in a few min-

utes they began to get better and in about a half hour from the time I received the sting, the symptoms had all disappeared and nothing was left to show except a little redness of the skin which I assumed was due to my frantic rubbing. Five or six months ago I was stung at one time by five or six bees on my hands and arms. I seem to be very susceptible to the sting of bees and the result was extremely disagreeable, the swelling remaining for several days with itching and more or less burning sensation. While not very severe, to say the least, it was very unpleasant. What I wonder is, was I sensitized in some way to this poison, and was that the cause of the present difficulty? If so, why did it appear only on the palms of my hands and why not equally on the soles of my feet, something which I rather expected when this thing was at its height but which did not materialize?

Respectfully yours,

D. H. GALLOWAY.



Dyspepsia and the Conditions Underlying It.

—Lord Dawson (*British Medical Journal*, June 3, 1922) states that dyspepsia may be due to causes within or without the stomach. Symptoms of chronic catarrh of the stomach are often associated with infections of the teeth, gums, tonsils, sinuses, appendix, or colon, all showing the same type of streptococcus. Clinically, dyspepsias fall into three groups: 1, those attended with pain thirty or forty minutes after food, with epigastric tenderness and relief from vomiting and occasionally hematemesis; 2, those with pain two or three hours after meals, with or without tenderness, relieved by food and alkalies—the hyperchlorhydria complex; 3, those with distention and flatulence predominant, without vomiting and bleeding, and occasionally irregularity of the bowels. There may or may not be any structural lesion in any of the three groups. The typical lesion is gastric ulcer for group 1, duodenal ulcer for group 2, and cholecystitis for group 3, and all of them may be associated with a diseased appendix.

The cases of group 1 are mostly young women, anemic and constipated. Some show an ulcer and more a diseased appendix, but the majority show no anatomical lesion, the symptoms being due to a non-functioning colon, faulty liver metabolism, and the excretion of toxic products in the stomach, or to focal infections. Hematemesis does not necessarily mean the presence of a demonstrable lesion. Hyperchlorhydria may be due to many causes; it is associated with duodenal ulcer and less prominently with gastric ulcer. It is caused by lesions of the

appendix and colon and also by functional disturbances of the colon and it may be associated with so-called nervousness or gout. The cases of group 3 are difficult to diagnose properly because of their variety of symptoms and their similarity to fatigue dyspepsia, nervous dyspepsia, colitis, myocardial insufficiency, anemias, hyperthyroidism, and diseased appendix or gall-bladder.

Appendicitis may stimulate the underlying causes of any of the three groups, especially gastric and duodenal ulcers. The pain food time relationships are characteristic of ulcer, especially the duodenal. Gastric symptoms are produced by two factors: the reflex interference with gastric function and infection. Rontgenography reveals the character and speed of gastrointestinal movements and actual pathologic changes. The movements depend partly on the opaque substance used—barium stimulates whereas bismuth retards. The normal stomach may show variations in shape, position and size, depending upon the muscle tone. A defect in the shape and outline of the cap is fair evidence of ulcer, adhesions, or pressure, and a normal cap excludes the presence of a chronic ulcer. A growth is shown by a deficiency of the shadow or a raggedness of the edge, but early cases may show nothing. Delayed emptying may be due to pyloric obstruction, atony of the stomach, or it may be associated with diseases of the appendix, colon or gall-bladder, or heart and other diseases. Rapid emptying may be due to irritation from gastric catarrh, gastric ulcer, or an early growth, duodenal ulcer, chronic appendicitis, hyperchlorhydria, colitis, hyperthyroidism and irritability from nerve strain. Test meals and the bacterial and chemical examinations of the fasting gastric contents and duodenal contents are of considerable aid in the diagnosis.

In malignancies of the stomach the early symptoms are vague or even absent; pain may be absent until late, vomiting is rarely an early sign and hematemesis may be the first symptom; there is usually anemia and mental depression. Rontgenography does not always give evidence of the condition in the early stages, except when the tumor is secondary to an ulcer; serial Rontgenograms taken at short intervals often help to make the diagnosis. Operation is always indicated on the slightest suspicion of cancer.

Differential Diagnosis of Acute Appendicitis, Pyelitis and Salpingitis.—Worthington (*Virginia Medical Monthly*, June, 1922) emphasizes the following differential points: In acute appendicitis the temperature is elevated, but not markedly, seldom exceeding 101° F. unless peritonitis has developed. In pyelitis the temperature may reach the highest limits, while in salpingitis it will usually ascend rather high at some time during the day. Elevation of pulse with appendicitis is common and may be more significant than temperature. In pyelitis it is relatively slow as compared to the temperature, while in salpingitis it is elevated

with the temperature. Respirations are more limited with appendicitis than with other conditions and may be elevated for this reason. An extensive pelvic peritonitis may also limit the abdominal excursions, but pyelitis has no influence in this respect. The urine examined should always be a catheterized specimen. Frequently, there are no pus cells nor red corpuscles in the urine during an early pyelitis, and almost as often one finds a few in appendicitis and salpingitis. A large quantity of these organic sediments should arouse suspicion, at least. The leucocyte count is an aid. Whereas, in acute appendicitis one does not expect a count of over twenty thousand unless pus is present, in acute pyelitis it may vary from a moderate increase to a tremendous leucocytosis, depending on the extent of ureteral obstruction and the subsequent tension of pus in the renal pelvis. In salpingitis the count varies from slightly above normal to very high. The general appearance of the patient is helpful. The patient with acute appendicitis is the most quiet of the three and protects herself, particularly the abdomen. The pyelitis case may be restless, is usually flushed, but may feel quite well. The salpingitis case does not look as ill as the temperature, etc., would indicate. General abdominal distension is most common in the woman with salpingitis, and is not rare in pyelitis. Other serviceable indications are the location of tenderness and the results of pelvic examination, tho the latter may be misleading.

"Stomach Trouble" and Syphilis.—Stokes and Brown present an instructive analysis of the diagnosis of syphilis in 200 cases in the *American Journal of the Medical Sciences* (December, 1922). Eighteen per cent. of the patients with stomach trouble had had needless operations, and one-third of the laparotomies performed were on patients with gastric crises. The routine serum test and frequent Wassermann tests of the spinal fluid are urged by the authors.

Diagnosis of Spinal Cord Tumor.—Given a case with pain of definite localization, persisting without variation, except in degree, in its original territory for months, and especially for longer periods, Frazier and Spiller (*Archives of Neurology and Psychiatry*, November, 1922) assert one should at least have in mind the possibility of spinal tumor and be on the lookout for further confirmatory evidence, such as paresthesias, hyperesthesia, anesthesia, disturbance of reflexes and motor impairment. But pain alone, even tho localized for a considerable time, may be caused by radiculitis or meningomyelitis, and the development of other symptoms must be waited for before operation is justifiable. Pain associated with atrophy in the root distribution of the upper limb should arouse the suspicion of tumor, and yet if roentgen-ray examination reveals no pathologic condition, it seems, as a general rule, advisable to defer operation until some clinical evidence of

implication of the cord is obtained. Exaggeration of the tendon reflexes of the lower limb, especially if associated with Babinski reflex on the same side as the pain and atrophy of the upper limb, is a combination that may justify early operation. Should in addition to this a diminution of pain and temperature sensations be found in the lower limb of the opposite side, operation, under ordinary circumstances, should be performed. The incidence of paresthesias is also reviewed. Fourteen cases are reported in detail.

The Etiology of Epidemic Influenza.—The British Ministry of Health has recently published an exceedingly valuable contribution to the literature on influenza. The interesting report is entitled "Studies in the Etiology of Influenza." The author, James McIntosh, concludes as follows: (1) The predominating organism present was *B. influenza* (Pfeiffer), which could be demonstrated in 80 per cent. of cases; (2) other members of the catarrhal group of bacteria were much less frequent; (3) serologic tests confirmed an infection by *B. influenza*; (4) epidemic influenza is essentially an acute inflammation of the respiratory tract; (5) in the early stages the lung changes are suggestive more of toxic than of bacterial action, while in the later stages the lung picture may be complicated by other microbic infections; (6) the therapeutic effect of injections of pooled sera of convalescents was very encouraging; (7) *B. influenza* is a pathogenic microbe, producing its main lethal effect by means of a soluble toxin; (8) experimental inoculation of animals with filtered cultures produced effects similar to those in man; (9) injections of *B. influenza* vaccine can produce in susceptible persons a typical influenzal attack of short duration; (10) no evidence was obtained in support of the view that influenza is due to a filter-passing virus.



Whooping-Cough and Its Treatment.—Appel and Bloom (*Archives of Pediatrics*, March, 1922) outline the history, etiology, pathology, symptoms, complications, sequelæ, diagnosis, prognosis and, finally, the treatment of whooping-cough, in a thoro and comprehensive manner. In the treatment of this affliction, therapeutists have run the gamut of the entire *materia medica* without finding any agent or group of agents that has proven of any avail in the cure of the disease or in its prevention. As to prophylaxis, the authors state that in vaccines, we have a valuable aid and most inves-

tigators now believe that prophylaxis by vaccines is good, if allowance is made for those cases in which the disease is probably incubative at the time of the injections. Medical treatment is unsatisfactory; the most we can hope to do is to lessen the severity of the paroxysms by antispasmodics. The principal drugs and methods used in the past are discussed and the efficiency of vaccines is particularly stressed; the results of many investigators being cited. In a disease so dreadful as whooping-cough and so fatal in its immediate, and so disastrous in its late consequences, whose mortality is constantly on the increase and against which all methods have proven of so little use, any new means of combating it is worthy of all serious consideration, especially when such means is logical and founded on etiologic grounds. Logical because the giving of vaccines in an acute febrile disease, such as pneumonia or erysipelas is not to be encouraged, since it is but adding insult to a system already overburdened by a similar poison and which has not had a chance to accommodate itself to the new condition. In a low-grade toxemia, however, such as whooping-cough, the injection of the vaccines will throw the balance in favor of the body as is clearly demonstrated by the fact that after the third and fourth injections, there is an aggravation of the clinical picture; which at the same time gives an impetus to the further production of antibodies and from then on, the body is able to take care of itself and improvement is noted. Such a means we have in pertussis vaccine. In those cases where it has failed to give satisfaction, it is probable that the strain of organism used in the vaccine was different from that producing the disease, or that a mixed vaccine was not used since secondary invaders are always present with the pertussis bacillus, or that an inert vaccine was used or the dosage not sufficiently large.

Dietetic Treatment of Diabetes.—Linossier (*Paris Medical*, September 23, 1922) recalls that in 1908 he was preaching the advantages of restricting the diet in diabetes to less than 20 calories per kilogram per day. "Progress in medicine is by the alternation of extremes. The pendulum now has swung to the starvation treatment of diabetes." This, he says, reminds him of the parlor magician who borrows a handkerchief and a hat, and puts the handkerchief in the hat and then announces that he will cause the handkerchief to disappear. The trick is already done; he has already spirited away the handkerchief when he makes the announcement. The physician giving the Allen starvation treatment does the same thing. He puts the patient to bed; analyzes the blood and urine, and imposes a treatment that impresses the imagination. Then in a few days he announces the disappearance of the glycosuria and tells the patient he is cured. But in order to stay cured, he must follow a restricted diet. This restricted diet long kept up is the secret of the improvement, not the starvation. The handkerchief disappears when the attention of the pub-

lic is diverted, and it is in the intervals between the courses of treatment that the diabetes really improves. The fasting treatment may be useful to hasten results when haste is indicated; it may render valuable service in grave cases with acidosis. Its principal indication is the cases in which theoretically it seems contraindicated, as fasting induces acidosis in the healthy. Extreme caution is necessary; mishaps are rare, and yet they have been observed (Rathery). In any event, he advises to give as a beverage, instead of whisky, as Allen advises, infusions sweetened with levulose. Kulz's research has demonstrated that diabetics are able to make glycogen out of levulose, and we know that the lack of glycogen in the liver is one of the least disputed causes of acidosis.

Treatment of Chronic Bronchitis.—*The Jour. des Praticiens* (October 21, 1921) states that the use of auto-vaccines in the treatment of chronic bronchitis with emphysema may be of benefit for the moment, but the symptoms recur with the same intensity at the first return of the complaint. Causal treatment alone offers any success.

a. Bronchitis of cardiac patients. Passive congestion in the bronchi is due to hyposystolia with dilated right heart. Treatment can only succeed if the patient is kept in bed on milk diet and given small doses of digitalin, five drops of the 1/1,000 crystalline solution for ten days, then an interval of two days and so on in succession; two cachets of 0.50 g. of theobromine are given each day. The so-called aortic bronchitis seems to be associated with insufficiency of the left ventricle, and for this same treatment should be applied. In the interval between the courses of digitalin extract of strophanthus, 1 m. g. twice a day, or ouabaine, two or three tablets of 1/10 of a milligram are given.

b. Bronchitis of renal cases. There are different types, one being a passive congestion of the bases due to weakened myocardium, and relieved by the same treatment as cardiac cases. The others are attacks of congestion of the lungs and of hypersecretion. These are relieved by bleeding to 300 g., milk diet, and theobromine.

c. Gouty bronchitis. Attacks alternating with those of gout. Water diet for 24 hours and then milk diet and granules of colchicine, 1 m. g., two or three in the day at six-hourly intervals for the first three days and then two a day for four or five days.

d. Bronchitis in diabetes is relieved with the decrease of glycosuria, but if, as is often the case, it is tuberculous, benefit is doubtful.

e. Syphilitic bronchitis is often confused with tuberculous. There may be an early bronchitis when the secondary rash appears and affects the bronchial mucous membrane, and a late bronchitis. The specific treatment is successful, and even if tuberculosis is associated, this is benefited by the use of mercurials and arsenicals.

f. Bronchitis due to mycosis can only be determined by examination of the sputa. Aspergillosis, actinomycosis, and oosporosis all respond well to from 1 to 2 g. of potassium iodide a day. Broncho-pulmonary spirochetosis is benefited by anti-spirochetosis serum, 70 c. c. on the first day, then 50 c. c., and then 20 c. c.

g. Bronchitis due to nasal obstruction and asthma of rhino-pharyngeal origin call for special treatment by the laryngologist.

When the actual cause cannot be acted upon, relief may be obtained with frequent relapses. Bronchial asthma yields to injections of 1 m. g. of adrenalin, but the effect is not constant.

Bronchitis due to the common infections is relieved by intratracheal injections by means of Rosenthal's cannula. The parts above the glottis are anesthetized with 1/50 novocaine solution, and three times a week injections are given of from 10 to 20 c. c. of gomenol oil (10/40).

Flurin recommends—

Iodoform	0.50 g.
Eucalyptol,	
Guaiacol	of each 2.0 g.
Sterilized olive oil	80.0 g.

10 to 20 c. c of 10/100 gomenol oil by intramuscular injection every three or four days has been found useful.

Large doses of balsam dry the membranes, small doses make the secretion more fluid—

Terpine	0.25 g.
Sodium benzoate	0.20 g.
For one cachet, two to be taken in the day.	
Creosote alters the bronchial secretion—	
Creosote (beech)	10 g.
Decoction of quillaia	90 g.
Tincture of opium	3 g.

One teaspoonful in a small enema at night every second or third night.

Dover's powder should be combined with thiocol—

Dover's powder	0.10 g.
Thiocol	0.40 g.

For one cachet. From three to five to be taken in the day between meals.

failure is associated with edema. Very few drugs can be relied on to act as specific cardiac stimulants, and even those with an assured position only act satisfactorily in the absence of severe toxemia. The less reliance placed on "cardiac tonics" the more attention will be given to those features in the management of the patient by which the heart can be saved from strain. In treating cardiac failure Hay urges that the discussion of the particular cardiac tonic to be administered should come last and not first, and that certain other lines of attack should receive full consideration. It is of primary importance to diminish the number of beats. Physical rest and freedom from excitement and worry will do this. At the same time there are many patients suffering from valvular disease and other forms of cardiac disability whose reserve power can be immensely improved by exercise, and to increase the reserve power is to diminish the liability to cardiac failure. Exercise accompanied by enjoyment is of far more value than specified active or passive movements according to time table, tho it is obvious that the latter can be more carefully graded. The inclinations of the patients must be considered, and the opportunities presenting themselves will in any particular case enable a pleasant and appropriate scheme of recreation to be drawn up. Anything interfering with the freedom of the respiratory movements must be remedied. Sleep is essential, and Hay thinks it is difficult to overestimate the great value of opium in the severer degrees of cardiac distress, and of the hypnotics, such as the bromides and chloral and chloral amid, in the milder manifestations. The vigor of the myocardium can only be maintained when the blood supply thru the coronaries is ample and of good quality. Hence the optimum blood-pressure must be maintained even if it be relatively high. The soundest treatment of all for many patients is the prolonged administration of hematinics. There is no better cardiac tonic to those suffering from valvular disease of the heart or chronic renal disease with arteriosclerosis than a liberal supply of first-class blood to the failing myocardium.

Treatment of Tapeworm.—An excellent tape-worm remedy for a child is pelletierin tannate, because its taste is more easily disguised than that of the oleoresin of aspidium. The dose for an 8 year old child, according to Young's (*Jour. of the Amer. Med. Ass'n*, January 6, 1923) rule, would be two-fifths of the adult dose, or from 0.08 to 0.12 gm. (the adult dose being given at from 0.20 to 0.30 gm.). This remedy is best administered dissolved in 30 c. c. of a syrup, for instance, syrup of citric acid, or in one of the aqueous elixirs of the National Formulary, such as the aqueous elixir of glycyrrhiza.

The oleoresin of aspidium, which is more difficult to disguise, would be administered in a dose of 3 gm., which is approximately two-fifths of the adult dose of 8 gm. This might be given in the form of an emulsion, or mixed with honey or fruit preserves. It is almost hopeless, however, to render this dose palatable.

Value of So-Called Cardiac Tonics.—Hay (*British Med. Jour.*, November 11, 1922) fears that as a profession physicians are too credulous as to the value of the majority of the so-called "cardiac tonics." The position of digitalis and its allies is of course unassailable, but their action must be fully understood to obtain the best results; and their administration must not be half hearted—the drug must be pushed to the full legitimate limit. When cardiac failure is consequent on fibrillation of the auricle, digitalis gives its dramatic results—but the sphere of its usefulness is not entirely confined to this group. It is open to serious question whether strychnine and alcohol have any direct stimulating effect on the heart, and camphor falls into the same category. The caffeine group, including theobromine and its compounds, has undoubtedly an influence on the heart and circulation which may be of service under certain conditions, especially when the

On the day preceding, it would be best to give a liquid diet, with mild mercurous chlorid (calomel), solution of magnesium citrate and colonic flushing to secure as clean an alimentary tract as possible. On the morning of the treatment the patient should stay in bed and be given a full dose of the remedy selected. If the patient is in bad physical condition or has considerable irritation of the alimentary tract, a smaller dose is preferable for the sake of safety, to be increased in case of failure at the next administration, for which it is best to wait a few weeks.

From one to two hours after the dose, the patient is given a wine-glassful of solution of magnesium citrate every hour until profuse evacuation has been secured.

Vaccines in Whooping-Cough.—In a recent article Appel and Bloom of New York City have given an excellent résumé of the work done in the treatment of pertussis with vaccines, states a writer in the *Jour. of the Indiana State Med. Ass'n* (April 15, 1922). For some thirteen years the discussion has gone on—more or less half-heartedly thru lack of sufficient enthusiasm on the part of its protagonists rather than because of any opposition. Briefly their position is this—that the use of a vaccine is logical because of the infectious character of the disease and because it produces a low grade toxemia; that its value is greater the earlier it is used and that it should be a mixed vaccine since the bacillus pertussis is always accompanied by secondary invaders. They recommend a vaccine containing per cubic centimeter:

Bacillus pertussis	1,000,000,000
M. catarrhalis	200,000,000
Staph. aureus	200,000,000
Staph. albus	200,000,000
Streptococcus	200,000,000
Bacillus influenzae	400,000,000
Pneumococcus I	50,000,000
Pneumococcus II	50,000,000
Pneumococcus III	50,000,000
Pneumococcus IV	50,000,000

The dosage advised was $\frac{1}{2}$, $1\frac{1}{2}$ and 2 c. c. given intramuscularly every other day.

Study of the statistics quoted as well as their own results justify their support of this form of therapy. As they suggest, its value particularly as a prophylactic must not be lost sight of merely because it is not 100 per cent. efficient. If as results seem to indicate, the average duration of the disease is reduced to 30 days, its severity mitigated, the number of complications reduced and the mortality lessened, the use of vaccine therapy, at least as an adjunct to other methods of treatment, needs no further recommendation.

Backache.—Dameshek (*Boston Medical and Surgical Journal*, December 7, 1922) in his conclusions wishes to emphasize several points:

1. Backache is probably the most common symptom presented for diagnosis and treatment.

2. The cause of chronic backache (aside from hypertrophic arthritis) is unknown, altho it probably is postural in origin.

3. Subluxation or relaxation of the sacroiliac joints is an explanation not supported by facts, and is probably of extremely rare occurrence.

4. The cause of chronic backache with limitation of motion, peculiar attitudes of standing, and severe pain may be due to a chronic synovitis with the formation of adhesions between the sacrum and ilia. Rational treatment is, therefore, the breaking of these adhesions.

5. Backache is almost invariably associated with other indefinite disorders, such as constipation, visceroptosis, and neurasthenia, and the treatment should include all of these.

6. Backache is slighted and improperly treated by the great majority of physicians and clinics, resulting, (a) in great economic loss to the patient, (1) who goes from doctor to doctor, (2) who is prevented from doing efficient work, (3) who may become a chronic invalid; (b) in loss of prestige of the physician; (c) in the popularity of the healing cults.

7. Most cases of chronic backache could be properly treated, with good chance of cure, if enough time and thought were given them.

8. The treatment should be detailed and sympathetic. It is (a) *General*—In which measures against constipation, visceroptosis, underlying complexes, wrong methods of standing or walking, gynecology, are considered; (b) *Local*—(1) For mild cases, a belt or adhesive strapping; (2) for more severe cases, a course of rest, and then a tight corset, as suggested by Dr. Lovett; (3) for severe cases, the breaking of adhesions by manipulation—the osteopathic method.

9. Backache could be advantageously treated in classes at the hospital.

Internal Iodine Treatment for Children.—Nobécourt (*Bulletin de l'Academie de Medicine*, October 11, 1922) has been treating children with a 10 per cent. tincture of iodine, giving 10, 20 or 30 drops a day, in milk, fractioned in three doses, increasing by a drop or two until the children are taking 40 to 100 drops a day. Some of the older children took up to 250 or 300 drops. This corresponds to 4 or 5 gm. of the tincture, that is, 0.4 or 0.5 gm. of iodine. It acts on the general health; the weight increases, and it seems to modify advantageously the lymphoid tissues, but it did not seem to display any anti-infectious action.

The Prevention of Ocular Defects in School Children.—Robinson (*Med. Jour. of So. Africa*, July, 1922) believes that many of the ocular defects of children are due to their too early entrance upon school life. From 4 to 7 years, the child's eyes are in a primitive or formative state, and during this period the child altho naturally hypermetropic, has a very high range of accommodation, which, if abused, will cause

increased blood supply and congestion. The height of desks and seats should be supervised, the child should not be allowed to get his work too near to his eyes, the light should be made to shine over the left shoulder. Lastly, the school books and other reading matter for the young child should be clearly printed, well spaced, with type not less than "12 point" printer's scale. The writer believes that by following out these simple principles alone, after a few years there would be noticed in the upper classes a great lessening of squint, blepharitis, corneal opacities, astigmatism, myopia and headache, together with an improved general health.

Bacillus Acidophilus in Treatment of Constipation.—The value of the *B. acidophilus* treatment was studied by Rettger and Cheplin (*Archives of Internal Medicine*, March, 1922) in cases of chronic constipation with the symptoms of so-called auto intoxication and other accompanying pathologic conditions, some of them acute; chronic diarrhea following an attack of bacillary dysentery; colitis, at times bloody, and more or less mucous; sprue and dermatitis (eczema). Viable cultures of *B. acidophilus* when used in sufficient amount and under the right conditions have important therapeutic properties. They are of particular merit in the treatment of chronic constipation and of diarrhea. The fullest benefit from the acidophilus treatment can be derived only when thoro bacteriologic examinations of the feces are made at frequent intervals.

Treatment of Pregnancy in Heart Disease.—Writing in *Surgery, Gynecology and Obstetrics* (February, 1922) Heaney expresses the belief that physicians are not justified in refusing pregnancy to women with accidental or symptomless heart murmurs. Women who have had recent broken compensation, or broken compensation in a preceding pregnancy, enter pregnancy greatly jeopardized. Cesarean section is not a ready and complete solution of the delivery of a woman with a broken compensation. Abortion for heart disease should have sterilization added to it when this can be accomplished with but little additional risk.

Post-Prohibition Alcoholism.—The conclusions at which Gerty arrives in his article in the *Chicago Medical Recorder* (December, 1922), are based on unprejudiced personal investigation and deserve, therefore, special attention at the present juncture. He states that:

1. Poisoning by alcoholic beverages, and more particularly by those now being consumed as alcoholic, is dreadfully pernicious.

2. War and early demobilization caused a marked decrease in alcoholism; this decrease continued thru the first year of prohibition, and during this year the low level of alcoholism was reached. Since July 1, 1920, there has been a steady increase in alcoholism.

3. A special study of this late increase shows that:

(a) Alcoholism in all forms has increased since July 1, 1920, but has not reached a pre-war or pre-prohibition level. (In 1917 there were 4,162 alcoholics; in 1920, 1,199; in 1921, 1,636). The present tendency is toward increase.

(b) The number of more definitely pathologic cases of alcoholism has increased greatly and has passed both pre-war and pre-prohibition levels. On a percentage basis the pre-prohibition level has been passed, and the pre-war level equaled. The morbidity and mortality are greater and the type of poisoning different from that formerly seen.

(c) The age proportion of alcoholics has remained constant for each year and the general conclusions as to increase and decrease for the whole period hold true for alcoholics of each age level. It is too soon to make definite statements as to the number of new alcoholics appearing.

4. A nation-wide study of this problem on the basis of accurate statistical observations, preferably in hospitals, is indicated. Scrupulous records should be kept. A special effort should be made to determine the number of new, or post-prohibition, alcoholics.

A Simple Diagnostic Test for Typhoid Fever.—According to Piviano (*Minerva Medica, Turin*, March 18, 1922), Petzetakis' iodine reaction in typhoid fever has positive results several days in advance of the Widal test. To 15 c. c. of urine in a test tube a few drops of a 5 per cent. solution of iodine in alcohol is added carefully so that the liquids do not mix. The reaction is considered positive if the upper portion of the urine assumes a yellowish golden color. No disturbing effect is exerted by the presence of pathologic constituents, such as albumin.

Acute Conditions of the Gall-Bladder.—In a discussion of the treatment of acute gall-bladder affections, Judd and Herbst (*Minnesota Medicine*, December, 1922) sum up their experiences as follows:

1. Gall-stones and cholecystitis should no longer be considered separately. The infection in the gall-bladder is merely part of an infection which involves several other tissues.

2. Most marked changes may occur in the tissues of the gall-bladder without clinical manifestations.

3. Severe symptoms may occur in cases in which there is but little evidence of infection in the gall-bladder.

4. Acute perforation of the gall-bladder with general soiling of the abdomen does not often occur, but chronic perforation and fistula formation into the duodenum, stomach or colon is not rare.

5. Much can be accomplished by adopting pre-operative measures in a jaundiced case.

6. Pancreatitis in association with cholecystitis occurs as chronic infection and as necrosis of the pancreatic tissues and fat elsewhere.

7. It is advisable to remove an acutely inflamed gall-bladder if the liver and pancreas are not extensively affected, and if there are no calculi in the common duct.

The Suspended Respiration Test.—Fitz-Patrick gives the following table of breath-holding ability in an article in the *American Journal of Surgery* (January, 1923):

Condition	Duration of Breath-holding
Diabetes	16 seconds
Thyroid disturbances	10 to 25 seconds
Anemia	15 seconds
Tuberculosis	12 to 15 seconds
Sepsis	12 seconds

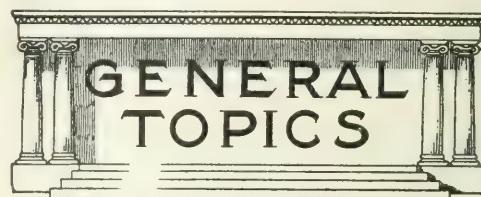
He concludes that any pregnant woman, who should be able to suspend respiration for 25 seconds, is found to be incapable of holding her breath for 15 seconds, she must be assumed to have an organic lesion. Consequently, she is a poor obstetrical risk, and should be given an anesthesia only by a professional anesthetist, gas-oxygen being the anesthetic choice, and the individual oxygen need being determined and supplied.

Drugs Which Aggravate Eczema.—According to Anderson (*Virginia Medical Monthly*, October, 1922), there are two drugs employed frequently in the treatment of eczema which are responsible for the prolongation of many cases which would otherwise be cured in a short time. These are sulphur and bichloride of mercury. The former is capable of producing a very intense dermatitis which we have all seen following the treatment of scabies, and is only useful where the condition follows the scratching and irritation in a case of scabies. Bichloride is capable of doing no good in these cases, and is capable of transforming a small patch of eczema into an acutely spreading case which will cause the patient a great amount of unnecessary suffering.

The Treatment of Rectal Constipation.—In the judgment of Foreman, writing in the *Western Medical Times* (January, 1923), the various solutions used as rectal enemas have little if any value except that they produce sufficient distention of the rectum to stimulate rectal tone adequate to expel the fecal contents. The glycerine has no particular value except possibly in the lower portion of the anal canal it may have some stimulating effect. Sometimes possibly the use of a 25 or 50 per cent. Epsom salt solution of four to six ounces may aid in the relaxation of the internal sphincter and

may be of value in cases of rectal constipation due to sphincter spasticity.

Treatment of Bladder Tuberculosis After Nephrectomy.—The persistence of serious bladder trouble is often due to secondary complications rather than to the tubercular infection. Thus a marked amelioration may be brought about by avoiding retention and dilating strictures, and by treating ulcerated areas thru a straight urethroscope or cystoscope.



Respiratory Paralysis Following Quinidin Therapy.—Many fatalities have been reported following the administration of quinidin. Reid (*Jour. of The Amer. Med. Ass'n*, December 9, 1922) says that most of these have been attributed to embolism, and, for a few, the explanation of cardiac standstill, associated with heart-block, has been given. Apparently, the occurrence of paralysis of respiration is rare. Von Frey, who introduced quinidin in cardiac therapy, has recorded two cases in his second report, and, more recently, a third was described by him and Hagemann. One of Haass' patients, who had taken 2.8 gm. (43 grains) of quinidin in three and a half days, suddenly became pulseless and cyanotic, and stopped breathing—after which a regular rhythm set in. In this case, it is probable, as Wilson and Herrmann suggest, that the difficulty was due to the Stokes-Adams syndrome in heart-block, the cessation of respiration following rather than preceding heart-block. Cohn and Levy say that four cases are reported in the literature, in all of which recovery occurred.

In his summary, the author concludes that paralysis of respiration following quinidin therapy is a rare occurrence.

Artificial Relaxation of Muscles.—Moser in the June issue of the *Medizinische Klinik* calls attention to his success in curing spasm in the digestive tract by injection of an anesthetic. Postoperative ileus has been cured by intraspinal injection of an anesthetic. With contracture of joints, intramuscular injection of an anesthetic may cure completely and permanently, as he shows by a number of examples. It often aids in correction of talipes, contracture of fingers, trismus, etc., and he regards it as indispensable in correction of luxations, and to facilitate endoscopy. Pre-sacral injection of 130 c. c. of a 0.1 per cent. procain solution has cured chronic constipation in numbers of rebel-

lious cases. Injection of the anesthetic into the pylorus cured permanently a case of pains and vomiting—sometimes with blood—after eating. The pylorus could be palpated as abnormally thick in this young woman. In another case the stomach disturbances of two years' standing subsided at once after injection into the tough pylorus of 4 c. c. of a 0.5 per cent. solution of procain, from two separate points. Similar success was realized in cases of stenosis of the small intestine or impacted gall-stones; the patients vomited the contents of the duodenum or jejunum, and great relief followed.

Sterilization of Ivory.—It has been proved by Bab (*Zentralblatt für Chirurgie*, July 1, 1922) that ivory to be used for plastic operations is sometimes injured by long boiling in sterilization. He consequently experimented to discover the minimum time required to sterilize ivory by boiling. Pieces of ivory 1.5 cm. thick were absolutely sterilized in eight minutes. Experiments with alcohol as a sterilizer proved unsatisfactory. He holds that if the boiling time for sterilization is reduced to eight minutes, the durability of ivory used for implants will be considerably increased.

Blood-Pressure During Sleep.—Blume (*Ugeskrift for Laeger*, August 31, 1922) has been examining the blood-pressure during sleep of 20 men, 20 women and 10 children with various affections. The difference between the systolic pressure awake and asleep averaged 15 mm. in the 8 men with day pressure under 120. The difference averaged 21 mm. in the 13 women with blood-pressure under 116, the average day pressure dropping to 89 in sleep. When the day pressure was high, the difference averaged 31 in the 12 men and 39 in the 7 women. In one child of 14 with pneumonia, the day pressure was between 116 and 132, and two hours after slumber had begun it measured 87, then 112 and then 79. The findings thus confirm those published recently by Müller.

Progress in Cancer Research.—In a scholarly article on this subject, dealing with the history of the study of this disease and giving many interesting details, Luden (*Minnesota Medicine*, September, 1922), in his conclusions, gives the following:

The history of cancer research shows that the formerly much derided biochemical conception of malignant growth has not only survived thru twenty-four centuries, but that it is gaining ground today because instruments and methods for chemical investigations are available.

The practical value of researches along chemical lines in malignancy has been demonstrated by recent investigations.

The complexity of metabolic functions and the number of organs concerned in their regula-

tion make it seem improbable that any single cause of or cure for malignancy is likely to be discovered.

The very multiplicity of the factors underlying malignant growth warrants, however, the conclusion that the consideration of all factors which tend to disturb metabolic processes in the body, that is, chemical processes, will prove of benefit to the victim of malignant disease.

The complete and spontaneous regression of inoperable, malignant tumors in 100 well-authenticated cases is conclusive evidence that the human body can wage a winning fight against malignancy.

The knowledge that other patients have become clinically well, altho the odds seemed entirely against them, can do no harm to any patient suffering from a malignant condition and may prove beneficial to him.

Early diagnosis and early treatment of malignancy are of primary importance, but the regulation of the diet is of value, also, because it facilitates the chemical tasks of the body.

Hot and Defectively Chewed Foods as Factors in Gastric Ulcer.—Heiser (*Medizinische Klinik*, August 6, 1922) states that in 108 gastric ulcer patients in the last two years he found only four that were not notorious for insisting on their food and beverages being served very hot, or they were very rapid eaters, or both. He tested the temperature of the soups and beverages served on his family table for several winter months, and was surprised to find the tea in the cup and the soup in the plate from 75 to 81 C. in the summer. When the soup in the plate is at 85, we can assume the temperature is 70 or 80 when it reaches the stomach. Personally, he found temperatures above 70 distasteful, but others relished the higher temperatures. Fluids at a temperature of 70 to 80 may irritate or even blister the skin, especially in prolonged contact. Decker found typical gastric ulcer in two dogs fed with hot gruel, 62° C. But experiments on animals are not needed to corroborate the injurious influence of the scorching, especially when supplemented by the scraping of unchewed food. The hot food is responsible further for hypersecretion of gastric juice; the hyperacidity is due to the stimulation from the heat. This, long continued, may exhaust the secretion, and achylia result. Hot coffee on an empty stomach, year after year, may explain a number of puzzling features of gastric ulcers. Scorching, plus the peptic action of the gastric juice—this is enough to explain many ulcers.

New Method of Removing Appendix.—After the meso-appendix has been tied and freed, Highsmith (*Georgia Med. Ass'n Jour.*, September, 1922) crushes the appendix just above the base with a Ferguson forceps and ties it with a 000 plain catgut. Then a loop-clamp (which may be of silkworm gut or plain catgut) is slipped down over the appendix to the crushed portion, and is tightened down over the

crushed area, being held with the left hand while it is cut away with the right. After the appendix has been cut away the end of the loop-clamp holding the stump is slightly pressed down in the cecum, and tucked in with a Lembert suture for about 3 cm., after which the loop is cut. The stump of the meso-appendix is brought over the sutured area.



Dr. Watson L. Savage is pleased to inform the medical profession of the recent enlargement and improvement of the accommodations for patients in establishments that are centrally and conveniently located.

At No. 56 West 45th Street the Woman's Department, especially designed for improving both health and appearance by means of approved methods of exercise and mechanical devices, is under the direction of an efficient staff. The hours are between 9 A. M. and 4.30 P. M. Dr. Savage will be in attendance for consultations in the forenoon of Monday, Wednesday and Friday and in the afternoon of Tuesday and Thursday.

At No. 253 Madison Avenue (between 38th and 39th Street) the Men's Department is installed in its new quarters, equipped with the latest gymnastic apparatus, squash racquet court, handball court, electric light baths, Scotch douche, massage tables, etc. The hours are between 9 A. M. and 10 P. M. Dr. Savage will be in attendance for consultations in the afternoon of Monday, Wednesday and Friday and in the forenoon of Tuesday and Thursday.

For the past thirty years it has been the policy of Dr. Savage to cooperate with physicians in every way—a policy that will be continued at both places.

You are cordially invited to inspect these establishments so that a first-hand knowledge of their location, equipment and methods may prove of value to you, your friends and your patients.

Another Consolidation.—Dr. M. M. Smith, who for a number of years has edited the *Medical Insurance and Health Conservation*, has disposed of his journal to Mrs. Josephine Daniel, who will consolidate it with her monthly magazine, *Practical Medicine and Surgery*. The new combination journal will be published at Austin, Tex., under the management of Mrs. Daniel. Dr. Smith will be retained as one of the associate editors. We are sorry to learn that ill health is the cause assigned by Dr. Smith for relinquishing control of his splendid magazine, and we sincerely hope that a rest from the strenuous duties of the editorial chair

will completely restore Dr. Smith to his former health and vigor. The new journal has our very best wishes, and under the management of Mrs. Daniel we predict for it a signal success.

Whistling Treatment for Speech Defects.—

A new and original departure has been opened for the first time in the field of Speech Correction, by the formation of two whistling classes. The first one in Boston, Mass., the second one in Washington, D. C. Whistling as an aid to speech correction and speech perfection, is a new and original idea of Dr. Walter B. Swift of Boston. The good results have been unusual and unexpected.

American Society for Clinical Investigation.—

The fifteenth annual meeting of the society will be held in Atlantic City, N. J., April 30. Those submitting titles of papers to be read before the meeting must accompany them with abstracts of their papers (not more than 200 words). Titles should be sent to Dr. James H. Means, secretary of the society, 15 Chestnut Street, Boston, not later than March 1.

Congress on Surgery to Meet in London.—

The International Congress of Surgery issues an advance program for the meeting, which will occur in London, July 16-21. The sessions will be held under the presidency of Sir William MacEwen. Among American surgeons who are included on the program are the following: Drs. W. R. MacAusland, Boston, "Arthroplastics"; Harvey Cushing, Boston, "Surgery of the Endocrines"; C. Frazier, Philadelphia, "Surgery of Traumatic Nerve Lesions"; George Crile, Cleveland, "Operative Shock"; William J. Mayo, Rochester, "The Splenic Syndromes," and Major A. P. Hichens, Washington, "Serum and Vaccine Therapy." The arrangements for the Congress are in the hands of the secretary, Dr. L. Mayer, who may be addressed at 72 Rue de la Loi, Brussels.

Number of Deaths Caused by Cancer.—Pfahler (*Inter. Jour. of Surg.*) states that during the war approximately 80,000 American soldiers lost their lives. During the same period approximately 180,000 or more than twice as many people in the United States lost their lives from cancer. Cancer causes one out of ten deaths after the age of forty in this country. This disease appears to be on the increase in every civilized country. It is estimated that at the present time approximately 100,000 people die of cancer each year in the United States.

Health Talks By Radio Reach 586,000.—

Nearly 44,000 school children and more than 26,000 employees of shops and factories have

received free advice in the last 12 months from physicians thru health talks arranged by Mrs. Katherine L. Sanders, director of the Brooklyn, N. Y., Chapter's Speakers' Bureau. With the help afforded by radio, these talks have reached an estimated audience of 586,000 in the last year.

Every form of institution in the country, regardless of race or creed, has been reached in some way by this free service. Y. M. C. A.'s and Y. W. C. A.'s, many Catholic schools and church groups, the Council of Jewish Women, and like organizations have been enlisted. Twenty of these talks have been delivered to church audiences, 83 in clubs, 266 in shops and factories, 118 in schools, 41 in Y. M. C. A.'s and Y. W. C. A.'s and three in settlement houses. Seventy-nine miscellaneous organizations reached by radio make up the remainder of more than 600 which have had the service.

It is due largely to the response of physicians of Brooklyn, Mrs. Sanders explains, that such a record has been made possible. In the last year, 34 public health agencies of the country have contributed 168 speakers, and eight of these agencies have responded to calls for 460 talks. The Department of Health has provided speakers for 89 audiences; the Brooklyn Association for Improving the Condition of the Poor, 22, and the Committee for the Prevention of Tuberculosis, 74.

Eighty audiences have been provided for thru the Red Cross. Other cooperating agencies are the Joint Oral Hygiene Committee, 69; National Committee for the Prevention of Blindness, 47; American Society for the Control of Cancer, 55; Long Island College Hospital, 29.

Some of the most interested auditors have been those comprising gatherings among such widely differing groups as Y. M. C. A.'s, the Council of Jewish Women, Colony House, the Little Italy Neighborhood Association, and various mothers' clubs.

Changes in Narcotic Rules.—Regulations governing the prescribing of narcotics in the treatment of incurable diseases, and for aged and infirm addicts whose physical collapse from the withdrawal of the drug might be fatal, have been modified by the Commissioner of Internal Revenue, with a view to preserving as far as possible professional secrecy with respect to such cases. The Commissioner has heretofore ruled that an order purporting to be a prescription, issued to an addict or habitual user of narcotics, not in the course of professional treatment in an attempted cure of the patient but for the purpose of providing narcotics to keep him comfortable by maintaining his customary use, is not a lawful prescription; and that persons filling and receiving drugs under such an order, and the person issuing it, shall be regarded as guilty of violation of the law. Exceptions have been recognized, however, in the treatment of incurable diseases and of aged and infirm addicts. In the treatment of incurable diseases, it has been required that it be endorsed on the prescription that the drug is

dispensed in the treatment of an incurable disease, under the treasury decision just issued, the physician may endorse the prescription in that manner, or endorse simply, "Exception (1) Art. 117." In the treatment of aged and infirm addicts, the physician has heretofore been required to endorse on the prescription that the patient is aged and infirm, giving age, and that the drug is necessary to sustain life. By using either of the cryptic alternatives now allowed, a physician may limit the chances of undesirable disclosures of the patient's condition. To do away with another condition that has given rise to complaint, the druggist who fills a prescription is no longer required to obtain on the back of it the signature of the person who secures the drug prescription. It is sufficient that the name of such person appear.

Popularizing Health Knowledge.—The Bureau of Public Education of the New York City Department of Health is planning to furnish health lectures to lay organizations on the following topics:

Personal Hygiene—Physical Development, Dental Hygiene, Dental Surgery, Care of the Feet, Care of the Hair, General Sanitation.

Social Hygiene—Sex Education, Eugenics, Venereal Disease, Preventive Medicine, Bacteriology, Mental Hygiene.

Child Welfare—Prenatal Care, Care of the Pre-school Child, Care and Feeding of School Children, Remedy Physical Defects of School Children, School Health Work, Food, Preventable Diseases.

Industrial Hygiene—Occupational Diseases, Occupational Hazards, Accident Prevention.

Special Diseases—Cancer, Anthrax, Heart Disease, Nephritis, Diabetes, Diseases of the Circulatory System.

These lectures are available in English, Arabic, French, Greek, Italian, Polish, Russian, Spanish and Yiddish.

Deaths Caused By Tuberculosis.—The United States Bureau of the Census reports that in 1921 the total number of deaths from all forms of tuberculosis in the United States Registration Area numbered 88,135 out of the grand total of 1,032,009 deaths from all causes, or that tuberculosis was responsible for 8.5 per cent. of the total 1921 mortality. Ten years ago, namely, in 1911, tuberculosis caused 11.2 per cent. of all deaths, or 94,205 out of a total of 839,284 deaths. The tuberculosis death rate in 1911 was 159 per 100,000 population, whereas in 1921 it was 99.

Seek Magazines and Books for Americans in Siberia.—The Chapter of the American Red Cross in Vladivostok is known for its splendid record of service in dealing with the problem of refugee relief in that area, and the Chapter has not forgotten the four hundred or more

American boys stationed on a lonely Russian Island. Mrs. Pray, Secretary, writes that it takes an immense amount of reading matter to satisfy these boys and that a letter never goes from any of the Chapter officials to the States without appealing for a few magazines.

An appeal was sent thru the Pacific Division to the leading trans-Pacific steamship lines, requesting them at the end of voyages, to gather up American magazines and leave the same in care of either the Japan Chapter of the American Red Cross at Tokyo, or the China Central Committee, at Shanghai, which have agreed to send the magazines on to Vladivostok.

Prohibition.—In response to recent criticisms of the lax enforcement of the prohibition law and the subsequent message of President Harding, several changes in administration may be expected. There is a tentative move to transfer the state prohibition office from the Governor's to the Attorney-General's office.

A more liberal interpretation of the prohibition regulations affecting the prescribing of liquors by physicians was requested by the House of Delegates of the American Medical Association. It was also recommended that "provisions be made to supply bonded whiskey for medicinal use only." Since the A. M. A.'s action the leading pharmaceutical organizations have passed similar resolutions.

Medical Service Via Radio.—Arrangements have now been made whereby any ship provided with a radio outfit can receive prompt medical service from the United States Health Service, thru one of several Radio Corporations of American stations and other stations. When it is remembered that only a small proportion of the total number of ships equipped with radio have a ship doctor, the value of medical service via radio becomes apparent. The ship in need of medical service can now call up the nearest radio station, state the nature of the case or cases requiring medical attention, and receive a diagnosis of each case and complete instructions as to treatment within a few minutes.

Defective Eyes.—Statistics covering many years show that nine out of every ten persons over 21 usually have imperfect sight. At 31, the proportion is larger. About 40, it is almost impossible to find a man or woman with perfect sight. For the last 100 years the profession has wrestled in vain with the problem, finding no means compatible with the conditions of modern life for preventing errors of refraction, and no means of relieving them except by glasses. It was learned some years ago by the examination of several thousand school children in one of our large cities, that 66 per cent. of them had defective vision of such a degree as to warrant the wearing of glasses.

1923 Hospital Convention.—The annual hospital conference of the American Hospital Association will be held in the Municipal Auditorium, Milwaukee, Wisconsin, during the week beginning October 29, 1923. In addition to the associations which met at Atlantic City last September it is likely that the American Sanatorium Association will join this conference. By the re-establishment of the Small Hospital Section much needed and valuable material particularly adapted to the smaller hospitals will be presented at the coming session in Milwaukee. The growth of the Association has increased the support and material available to all sections, and the rapid extension of the hospital field thru the opening of many small community hospitals has certainly extended the need for this material.

Prevention of Blindness.—The Maine Public Health Association is arranging for a statewide campaign for the protection of eyesight. The campaign will cover three phases: prevention of blindness in the newborn, the conservation of the eyes of children, and the prevention of eye accidents in industry.

The Academy's New Home and Endowment.—Recently *Medical Week* announced the formal decision of the New York Academy of Medicine to dispose of its present home in what is now a busy commercial section and move to a new site further uptown. Later details of this advance have appeared from time to time in the city's dailies along with the gratifying fact that gifts of \$1,000,000 each from the Carnegie and the Rockefeller Foundations will ensure ample endowment of the great structure (ten to twelve stories) to be erected at the southeast corner of Park Avenue and 60th Street.

The new home of the Academy is to include every modern facility for meetings, for use of its great library (now next in size to that of the Surgeon-General of the Army at Washington), for housing of its many public health activities, along with a broad gauge project to extend its usefulness to physicians generally over the entire metropolitan area. Already a chief factor in the city's many-sided life, the Academy is now to become one of the institutions pointed out to residents and visitors as among its greatest of all.

Prescriptions in English.—There are groups who are insisting that physicians write prescriptions "only in the English language." While there are perhaps some physicians who would not object to such regulations, exactness and accuracy might be sacrificed; because many of the derivative designations are either Botanical or Latin and are used in all scientific works. In these numerous instances, English terms would be detrimental to accuracy.

American Medicine

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X-Rays for Pertussis.—The search for a successful therapeutic agent to remove pertussis from the rank of a serious disease has led to considerable experimentation. A new means has been suggested by Bowditch and Leonard, *Boston Medical and Surgical Journal*, March 8, 1923, in "A Preliminary Report on the Treatment of Pertussis by the X-Ray."

A series of twenty-six persons with active whooping-cough received X-ray treatment, to the extent of three or four applications of the X-ray at intervals of two days. The dosage was regulated according to the age of the patient and, naturally, the total amount of X-ray given to any one patient was well under an erythema dose. From this limited group the authors suggest a definite improvement of the patients, unexplainable on the basis of convalescence. A few were deemed to be cured, that is freed from the spasm of coughing, while perhaps twenty per cent. of the total were relieved thru a marked reduction in the number of whooping spasms, more than could be accounted for by the normal convalescence of the patients.

With scientific conservatism, the authors do not arrive at any definite conclusions. Their present opinion merely leads them to suggest that the X-ray may be of more value in the treatment of whooping-cough than any other form of treatment, including serum.

It is to be hoped that further investigation of this method of treatment may prove its efficacy, regardless of whether any rational explanation is available or not. The complications and sequelæ of whooping-cough are frequently so serious and its mortality rate so high, that any empiric method of treatment will be hailed with enthusiasm.

It will be necessary for a considerable period of time to study carefully those already treated in this manner, in order to be certain that the X-ray treatment has not caused other changes than those believed to have helped in relieving the spasms. There is a suggestion of power and action that may possibly be causative of tissue changes which merit further study. Inasmuch as the authors make no suggestion as to the period that has elapsed since the treatments were given, it is impossible to judge of any facts, save those presented. It is certain that the work should be carried on with extreme caution, and under the careful observation of capable clinicians, as well as with the assistance of bacteriologists.

If this procedure proves to be of definite value, certainly the whooping-cough problem, in so far as curative measures are concerned, will be greatly simplified, and the economic results will be of considerable importance to the community. There will be a gain, not merely in lives saved, but in the working efficiency of the adults. It must be recalled, however, that the intensity of

pertussis varies considerably and that at least several hundred individuals with the disease should be treated in various parts of the country, with a considerable variation in age distribution of the patients. Inasmuch as no particular claims have been made for this method of treatment, save the expression of a feeling that it is of value, there is reason to believe that a further report will be postponed until more adequate judgment becomes possible. The plan of offering a preliminary report, however, is distinctly helpful in that it focuses the attention of large groups of workers upon the same problem and enables an earlier compilation of judgment upon the proposed palliative measure. This is a far more sane procedure than bursting forth with an alleged cure, based upon insufficient experience, only to raise hopes that must be dashed to the ground, when a wider knowledge proves them to be false.

It is certainly to be hoped that the experimentations with the X-ray will prove themselves to be effective and that a further study as to its mechanism may shed light upon the larger problem of preventing pertussis.

Health Centers and Insurance.—In a most excellent book on "Public Relief of Sickness," Gerald Morgan gives a résumé of current conditions of medical practice, particularly in so far as they apply to the great mass of the population, with moderate or low incomes. These discussions manifestly are based upon an evident deliberative and calm, dispassionate evaluation of a variety of medical problems. A significant line occurs: "A young doctor in taking up country practice would cut himself off from modern medicine."

While this may not be literally and absolutely true, there is sufficient truth in the statement to warrant a study of the current practice in rural communities. The facts already available indicate a lack of laboratory and hospital facilities, with a group of specialists at hand in larger cities, and particularly in those cities which have become centers of medical achievements.

In order to remedy the shortcomings in medical practice, especially in the smaller communities, various agencies have been considered, but Mr. Morgan advocates particularly the extension of health centers, more or less along the lines being demonstrated in New York State. He also makes numerous suggestions concerning the establishment of hospital and sanitaria, a variety of dispensaries, laboratories, auxiliary to the state laboratories, public health nursing service, cooperation with the Department of Education, and the examination of school children, machinery for the periodic examination of individuals desiring it, and the provision of specialized consultants. Such a program, of course, would approximate a perfect and ideal system, but communities are far from willing to support or undertake such an elaborate program, particularly with the acceptance of the principle that physicians are to be paid for all services in connection therewith.

The idea of state aid for health centers or any other program that will make possible adequate medical treatment to the widest extent, must stand or fall, according to the general willingness of the taxpayers to accept an increase tax to meet the health needs of the state. In all probability the time is not far distant when public opinion will be sufficiently strong on the matter of medical care to broaden the health program

in such a manner as to elevate rural standards of treatment, commensurate with the importance of the rural population. When this time comes, the young physician entering into rural practice will become part of the modern medical machinery and the criticisms concerning his inability to practice along most modern lines will be obviated to a great extent. No scheme of protection of public health can become completely successful without securing the cooperation and support of local physicians.

The recurrent expression of opinion that every doctor is, in a sense, an unofficial health officer, probably is true, tho a full sense of responsibility cannot be placed upon those whose services are purely voluntary. The need for payment of medical services becomes more apparent. There is no reason why states should capitalize the willingness of doctors to aid the public, and take the credit for working systems to improve the public health on the basis of exploiting members of the medical profession. In time, the principle of state aid for the relief or prevention of illness will include the normal expenditure of funds for the employment of physicians whose services are requisite for the success of the undertaking.

The itinerant clinic cannot function with an adequate degree of efficiency and some measures will be undertaken to provide for the permanent establishment of health centers at such places as will meet the needs of large rural populations. There is no cogent reason why health centers, properly organized, equipped, and maintained, should not become an effective force in conserving public health and raising the standards of medical practice and advancing the welfare of the professional and lay groups, affected by their existence.

The health center idea, in combination with a system of cash benefits for sickness, offers a reasonable solution for many of the problems that have been raised by attempts at social insurance legislation. The divorcing of cash benefits from medical treatment affords a basis of compromise in legislation that should enlist the interest and sympathy of a considerable proportion of the medical profession that has been opposed to social insurance, established along lines that have been tried in Germany, England, and elsewhere. Regardless of whether the entire health insurance idea is accepted, there is reason to believe that the plan for the promulgation of legislation leading to an extension of health center facilities is receiving increasingly favorable attention. It is desirable, therefore, that physicians taking cognizance of this trend, should seek to understand its plans and principles, with a view to incorporating in all such legislation such features as will tend to decrease the exploitation of physicians.

Sanitary Food Handlers.—"Medical Examination of Food Handlers" receives consideration by C. V. Craster, Health Officer of Newark, New Jersey, in the *American Journal of Public Health*, March, 1923. He calls attention to a significant point of distinction in the examinations of this character, in that the examination of food handlers essentially is for the purpose of protecting the public against diseases of a contagious character, which may be disseminated by personal servants. The general procedure, particularly as represented in the New York City Department of Health, includes a general, periodical physical examination, as well as an investi-

gation of the possibilities of spreading contagious diseases.

Dr. Craster raises this question: "Is it desirable or necessary in such a procedure for a municipality to undertake to look for all physical defects, or only for the presence of contagious diseases?"

Considering the cost to communities for complete physical examinations, it is patent that, with limited funds available, the most important information to be secured is the freedom of the food handlers from communicable diseases. It is quite evident that the distinction is made between the examination of food handlers as a public health measure and as a private health measure. Knowledge concerning freedom from contagious diseases is protective to the community, whereas information concerning flat feet, spinal curvature, etc., presents no communal problem, save in so far as the efficiency of the individual worker is concerned. Hence, from the standpoint of the protective examination of food handlers, it is immaterial whether there exists a physical defect, so long as the individual is not a source of contagion. It may be urged, quite properly, that if the community is to hope for the periodical physical examination of employees, this service should be non-selective and should be made available for all types of workers in the community, regardless of whether they are engaged in food handling, domestic service, or industrial activity. The practical value of determining the freedom from contagion of those who are in intimate contact with the public as involved in the serving of food and drink, is of such preeminent character as to make this form of examination of food handlers imperative and free from the claim that it represents an unwarranted selective service.

It is obvious that by restricting the examination of food handlers to determining the presence or absence of contagion, it permits a higher degree of efficiency at a lower cost, in so far as the protection of the public is concerned. In Newark the examination provides for the reasonable safeguarding of food against infection by the food handlers, who are examined, to determine the presence or absence of tuberculosis, various skin diseases, diphtheria, typhoid fever, and existent venereal diseases. Thus, stress is placed upon the sanitary inspection of the individual, rather than his complete physical examination.

The experience of Newark indicates that this type of examination can easily be made by the Department of Health physicians or a private physician, assisted by the public laboratories, which already perform the major portion of the routine examination for diphtheria, typhoid fever, tuberculosis and venereal diseases. The complete medical examination demands the employment of a larger number of examining physicians and involves a large expenditure of time, money and energy, which does not give an adequate protective return to the community. It, therefore, appears reasonable to direct the attention of the communities to the importance of the sanitary examination of food handlers, as opposed to their complete medical examination.

From the standpoint of preventive medicine, it cannot be said that the periodical physical examination of all workers is desirable and in so far as public funds are available, this highly specific form of public service should be made available for all citizens. Specific problems arise in connection with the hazards of particular industries, so that to some extent the prob-

lem of industrial diseases offers opportunities for more extensive investigations as to health than are required in the routine examinations of office workers, clerks and indoor workers in non-hazardous industries. The physical hazards of food handlers are not greater, nor as great, as those existent in many other forms of occupations, wherefore there appears to be no especial reason for singling out this group to have complete medical examinations made at the public's expense. From the standpoint of sanitation, however, food handlers constitute a group of extra hazard to the public, even tho the presence of contagious diseases in this group may be in no higher proportion than is to be found in any other group of workers.

The number of individuals with tuberculosis, or syphilis, is not increased in the food handling population above the general averages for all occupations, nor is there a larger percentage of carriers of diphtheria or typhoid fever, but the relation of this small number to the consuming public is so close as to constitute a far more serious problem than similar bacilli carriers in non-food-handling occupations. This is in marked contradistinction to the influences upon public health that might accrue, if it were found that food handlers had a considerably higher proportion of myopia, scoliosis, endocarditis, or cirrhosis of the liver.

It would seem, therefore, to be distinctly advantageous to center attention upon the sanitary examination of food handlers as a specific phase of industrial hygiene, making available for all workers the periodic medical examinations, in so far as funds and personnel are available. While the protection of the community against the food handler relieves a considerable danger from

food-borne infection, the physical examination of all workers would increase the standard of physical health of the community and raise the level of physical effectiveness.

With the early detection of incipient diseases and the presence of handicaps, considerable communal illness may be avoided, which brings in its large dividends to the community, particularly thru the saving of money, time and service. The benefit accrues not merely to the individuals examined, but also the community upon which many of these individuals become public charges, if their early diseased states are not recognized during their early stages. The wisest program provides for the complete system of examination of industrial workers.

Hospital Services.—The United Hospital Fund of New York seeks to provide supplemental funds for fifty-eight non-municipal hospitals in Greater New York. This money is impartially distributed on the basis of hospital "Free Work." It further aims to promote high standards of administration, accounts, and perform such other functions as will promote the more effective treatment of the poor thruout the hospital and dispensary services.

From its annual report of 1922, one gains some insight into the tremendous amount of work that is done for the benefit of the sick poor. During the year ending December 31, 1921, fifty-six hospitals in Greater New York gave a total of 3,020,271 days of hospital service, of which forty-eight per cent. were free. The average cost per day for ward patients was \$3.93. The total number of beds available was 10,405, of which seventy-eight per cent. were in use daily. Of the hospital patients 39,229 were free;

21,679 were public charges; 87,715 were paying ward patients; and 46,658 were private patients. Thus less than twenty-five per cent. of the total patients were private patients.

The average number of days in the hospital was 15.4; the total valuation of the hospital grounds, buildings, equipment, with investments and real estate, care and hospital plant, was approximately one hundred million dollars.

Inasmuch as the service of physicians in hospitals is only paid for by private patients, it is patent that the medical profession gave a public service that involved treating seventy-six out of every hundred patients in the hospitals without a charge for their services. This is a significant public service and represents a rich contribution to communal health and comfort. An estimate as to the actual financial value of this service cannot be made, nor is it possible to approximate the returns to the public that have come from this free medical service. The total benefit accrued is so great, however, that the public should be willing to support hospitals in such a manner as to make possible the adequate equipment, laboratories, and scientific instruments, the food, medical supplies, and labor required to carry on the hospitals in a satisfactory, scientific and economical manner.

An improvement in the service of the New York City hospitals, that has greatly increased their capacities for caring for the sick, is manifest in the fact that during the past ten years the average period of hospitalization has dropped from 20.7 days to 15.4 days. This is a gross saving of approximately five days on the stay of each patient and, hence, increases by twenty-five per cent. the number of patients who can now

receive hospital care, as opposed to the number that could be cared for in 1911. Or, on the other hand, this may be said to represent twenty-five per cent. reduction of the cost for the treatment of each person treated in the hospital. This accomplishment, for such it is, has been due to a series of causes, which the *United Hospital Fund Report* tabulates as follows:

1. Improved facilities for diagnosis and treatment.
2. More staff consultations, by which the nature of the case is early determined and time saved in applying the remedy.
3. Larger provision for convalescent care, making earlier discharge possible without danger to the patient.
4. Improvement of and closer cooperation with the dispensaries, making it possible for them to continue the treatment of patients as ambulatory cases, who otherwise would continue to occupy a bed.

5. The development of the Social Service Department, which often contributes information of great value to the doctor in understanding the trouble, and which helps the patient by removing fear and misunderstanding and by relieving anxiety as to family matters."

Inasmuch as nineteen thousand out of thirty-two thousand hospital beds in New York are in voluntarily supported hospitals, it is patent that the great majority of medical, surgical and obstetrical cases are cared for in private hospitals and, therefore, public interest in these institutions should be constantly encouraged with a view to securing a larger measure of support. Hospitals are not financial institutions. Most usually the end of the year reveals a financial deficit. If there perchance be a surplus, it is utilized for improving the facilities of the institution, for caring for its charges.

The Encouragement of Private Hospitals.—It would seem unnecessary to present to the medical profession reasons for encouraging the support of private and volunteer hospitals, but it is well, at times, to reflect upon the nature and extent of medical service and the part it plays in contributing to communal health, comfort and happiness. Physicians, themselves, need not be backward in presenting the facts of hospital services to their communities. The public takes cognizance of the shortcomings of the medical profession without hesitation, and there is no reason why it should not hear from physicians some of the advantages that medical service yields to the community that believes the public taxes are sufficient to give adequate care to the sick poor.

In communities where the war chest idea continues to function, the claims of hospitals probably receive a fair measure of publicity, and the public support of the philanthropic organizations secures the general attention of all citizens. There is a tendency, however, to be conservative in planning hospital budgets, so that frequently the rate of progress in improvement is not as great as might be desired. Because of this, there is additional reason for gathering adequate statistical data concerning the actual public aid given by hospitals and dispensaries, so that figures may be available to substantiate arguments based upon the number of days treated, length of hospital stay, the per capita daily cost of various types of patients, and the absolute number of hospital days given free. It would be well, also, to approximate the value of the medical, surgical and obstetrical attention bestowed by the physicians in attendance at these institutions. If the medical profession is to secure the finest facilities for the highest type of med-

ical services, the public requires education in terms of dollars and cents as to the hospital needs and the gains that will accrue to the community, giving freely and adequately to the maintenance and support of all forms of medical institutions.

A Railway Sanitary Code.—The season approaches when plans are being laid for summer vacations. The marked increase in traveling during the past few years has created many difficulties for those who aim to protect public health. These efforts and interests have resulted in the formation of the "Standard Railway Sanitary Code," which has been approved by the Council of Health Officers of North America, and by the United States Public Health Service. The most important provisions of this code have been incorporated in the interstate quarantine regulations of the United States and these apply to the conditions of traveling from one state to another.

A recent *Bulletin of the United States Public Health Service* indicates that twenty states have already adopted the Standard Railway Sanitary Code, so that uniform provisions now govern the travel of persons suffering from contagious diseases in a large part of the United States. It is recognized that it is important to prevent the travel of infected persons. Unknowingly, persons in the incubating period of contagious diseases may undertake a journey, which may be completed before the active stage evidences itself, or the disease may burst forth while the individual is en route. Under certain circumstances, it is important that persons with contagious diseases should travel, as, for example, the prompt return of a sick child to its home for the purpose of pro-

tecting its own health, and that of children at whose home it may have been visiting. Adults taken ill in hotels, in communities with inadequate medical facilities, may properly desire to return to their own city, where they may receive the best medical attention. It is impossible to prevent the travel of tuberculous patients to sanatoria far removed from their homes, for the purpose of treatment. Hence, a code for travelers with contagious diseases, is of paramount importance.

Measures for Making Travel Harmless.

—The present code aims to establish measures to render such travel harmless. General provisions as to individual towels and drinking cups, and the control of food and water on trains, are fully recognized as protective measures. In addition to these, various provisions are made that involve the isolation of the patient, his care by a responsible attendant, the disinfection of all bodily discharges, the disinfection of eating and drinking utensils, and the determination of the means for enforcing these regulations without interfering with the health, or comfort of other passengers, or the gross contamination of the car.

Most of the common contagious diseases are transmitted by the sputum, feces and urine, and hence simple provisions suffice to protect travelers against infection by these excretions and secretions. The code forbids absolutely the travel of persons with any of the five major diseases, as plague, cholera, yellow fever, typhus and smallpox. Thus far, the first four of these are not common in the United States, but their potential dangers are so great that it is deemed advisable to make these diseased states absolutely quarantinable.

The method of the spread of smallpox

among those unvaccinated is so rapid as to make prevention of dissemination during a period of travel generally impossible.

Venereal diseases are not included in the list mentioned in the code, because their detection is difficult and regulations of infected persons are impracticable and reasonably undesirable, unless there are large open lesions on exposed surfaces. Where health officers know of the existence of venereal diseases that may be easily transmitted during travel, interstate quarantine regulations require the issuance of permits from health officers before entering upon a journey.

Lepers may travel under permits from the Surgeon General of the Public Health Service, and from State Departments of Health.

The organization of health codes for the protection of travelers represents a helpful effort to decrease the hazards of travel, and there appears to be little reason why every state in the Union should not adopt the Standard Railway Sanitary Code for the protection of its own citizens against infection by travelers, as well as giving further safety to the traveling public of other states.

The wide extension of summer travel, the multiplicity of means of transportation and the economic value of the tourist, constitute sound reasons for perfecting our hygienic measures of promoting safety. No one believes that an absolute system of rigid regulations is possible, save in the direction of guarding those elements wholly under the control of transportation systems. The tourist must always be protected against the tourist, even tho it is difficult to secure the initiative and direction of the traveler, who is most concerned with his personal comfort and welfare, rather than concerned with the larger idea of communal health.

The standardization of the hygiene of travel serves in no small measure as an

educating factor that tends to awaken the consciousness of the tourist to his duties and obligations, and the degree to which his own health and safety is bound up in that of his fellow travelers.

Mental Capability.—Recognizing the unity of life, there is every reason to believe that physicians of the future will bestow a larger measure of attention upon the mental capacities of their patients. The wider introduction of mental examinations into the study of school children indicates a larger use of tests for intelligence, in the matter of grading school children. There is an awakened opinion on the part of the general public as to the necessity for securing a fuller degree of understanding of children than that acquired thru mere physical inspection. Hence it is important that physicians take cognizance of the extensive data available upon the subject of mental examinations of school children, with a view to understanding their aims and utilities.

From the practical standpoint, intelligence tests have definite values in facilitating the proper school grading of children, in making possible the development of their inherent educational potentials, in promoting a more intelligent plane of mental hygiene, in yielding valuable information for the determination of vocational fitness, and in detecting those youthful elements in the population who require special oversight and guidance to lessen their likelihood of developing delinquent qualities.

This summary of values is brief, and not comprehensive, but, nevertheless, suggests some of the meritorious features to be secured thru rational tests for the determination of intelligence.

There may be considerable difference of opinion as to the actual definition as to what constitutes intelligence. In so far as tests have thus far been derived, the aim is to determine the general mental capacity for the acquisition of education. Intelligence thus becomes the general capacity of an individual consciously to adjust his thinking to new requirements. The evidence of intelligence is found in the adaptability of the individual to meet new problems and conditions of life. Intelligence tests are primarily concerned with the sum total of the processes involved in mental adaptations that deal with the cognitive faculties, as ordinarily practiced, whether thru group or individual tests. Intelligence tests do not serve to measure emotion or volition, or give an index of those other elements of personality which enter into effective living.

A considerable degree of the opposition to the routine application of intelligence tests arises from problems incident to their interpretation, rather than to the index of capacity which is revealed. Just as a thermometer gives a figure indicating the degree of internal heat, without otherwise serving diagnostically, so the intelligence quotient establishes an index of inherent capacity, without giving further information concerning the status of the individual tested.

An intelligence quotient gives little light upon the state of physical health, the existence of mental disease, the emotional instability, or the volitional irregularities.

Properly analyzed, the intelligence tests yield valuable information concerning memory, discrimination, imagination, reasoning, persistence and general adaptation to new problems. As a whole, they afford no absolute standard for explaining educational failures, except in such instances as feeble-mindedness is demonstrated.

The testing of intelligence is a definite procedure of establishing values. Criticism of technic and methods fails to invalidate its general worth. Many objections arise from the fact that too much is expected, together with failure to appreciate exactly what they pretend and actually do offer to the examiner for his enlightenment and for giving guidance to the tested individual.

Every laboratory test possesses definite limitations, within which it affords valuable information. The failures in determining tubercle bacilli in the sputum do not argue against the value of the examination when positive results are achieved; some irregularity in the Wassermann test does not militate against the general advantage of this procedure in the determination of syphilitic infection. Similarly, some inadequacies of intelligence testing do not suffice to condemn their general application.

Since Binet introduced his basic tests, they have been variously modified by Goddard, Terman, and others, in such a manner as to be more serviceable for English-speaking children. In addition, numerous other tests, as, for example, the performance tests of Pintner and Patterson, and the maze test of Porteus, have been introduced to supplement the earlier tests dependent upon an understanding of language in such a way as to check up to some degree the facts ascertained under the original schedule of tests. Thus, the intelligence tests are constantly undergoing scrutiny and criticism, with a view to increasing their real ability and advancing their serviceability.

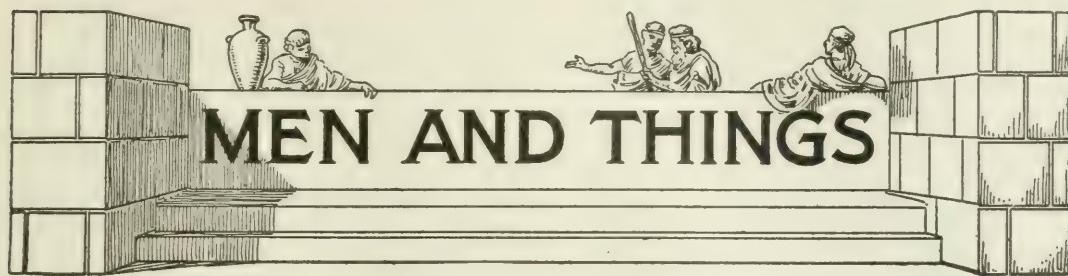
Psychiatrists have made a moderate use of intelligence tests for the purpose of determining intelligence deteriorations. The application of psychologic methods has not been widely utilized by pediatricians or general practitioners, despite the fact that it is this group which can contribute the greatest

service to the community by employing them. There is no need for the intelligence tests in determining Mongolian imbecility, nor do they possess great value in estimating intellectual power far above or far below what constitutes the personal idea of average mentalities. There is, however, a tremendous field for public service in being able to discriminate the large groups of children, the normality of whose mental endowment is open to question. The necessity for being able to determine the morons and children with borderline intelligence is greater than ever before, and in ascertaining these two groups of the community, physicians may be said to possess the greatest opportunity for useful service.

As a group, the medical profession is slow to take up new procedures that are not essentially therapeutic in character. Their delays in applying new principles are largely responsible for the existence and development of new professions and the growth of pseudo-scientific cults, which exploit the public on the basis of theories, which while generally invalid, possibly contain a kernel of truth.

The growth of interest in intelligence testing affords a new opportunity for the profession to demonstrate its accessibility to new ideas. There is a demand for further light upon the mental status of children. Are physicians going to step into this field and cultivate it, or are they willing to permit a new group to absorb this opportunity for studying mental capacities? The close and integral relations of physical and mental health are such, that doctors scarcely can afford to ignore the interrelated activities.

Education is not merely a matter of physical health—educability involves a learning capacity and intelligence, which involves the entire organism, in which the medical profession should be vitally concerned.



Birth Control Abroad.—It is one of the unique aspects of birth control that Europe, with its intense need of increasing birth, is nevertheless more liberal in its reception of the birth control philosophy, while this country, with no special need of adding to an already adequate population, has officially adopted an unreasoning and brutal attitude toward even the most moderate sponsors of that philosophy. We flatter ourselves on being more progressive than the Old World, but whenever it comes to a real test the proof is as often as not wanting. A case in point is the question of birth control. As presented by temperate thinkers, birth control (and it cannot too often be emphasized that birth *prevention* is only one of the incidental aspects of the larger question) is distinctly a progressive issue, seeking to replace the confusion of Nature with a reasoned adjustment to a social arrangement which has departed widely from Nature. What is the general attitude toward birth control in this country, and what is the public attitude, say in England? The answer may be found in the recent libel suit brought by Dr. Marie Stopes, London birth control leader, the English Margaret Sanger, against Dr. Halliday G. Sutherland. At the very time this trial was taking place (a trial which is almost inconceivable in New York, for example), Mrs. Sanger was being subjected to one humiliation after another in various American cities by police officials who had arrogated unto themselves the dictatorship of public morals and social well-being. In Albany the mayor and the police had stopped a meeting in which Mrs. Sanger, on the voluntary invitation of Albany matrons, was to plead, not for birth control, but for an intelligent law regarding birth control. It was at about this time that Dr. Stopes brought her libel suit against Dr. Sutherland. Dr. Sutherland, it appears, had in a published work referred in a de-

rogatory manner to Dr. Stopes' birth control activities among the East End poor of London and had declared that her book, "Married Love," was an offense against both modesty and morals. Harsher things than that have been said about Mrs. Sanger and her work, yet public opinion in this country would have discountenanced any effort by her to defend herself. In London the public attitude was different. The unusual spectacle was offered there of distinguished physicians rising to testify in favor of Dr. Stopes and to approve of birth control in terms of unqualified praise both for its spokeswoman and its message. That in itself is a situation hardly likely to arise in an American court.

Dr. Harold Chapple, obstetric surgeon and gynecologist to Guy's Hospital, said that he had read Dr. Stopes' books and, provided that the methods advocated were employed with average intelligence, they could do no harm. He declared that he could not see why poor people should be deprived of the knowledge which the rich could get anywhere. It was essential, he said, that a girl of sixteen should get her knowledge "from beautifully expressed books" rather than from more sordid sources. Dr. Chapple did not hesitate to give it as his conviction that instruction in birth control should be given, as it is a woman's problem and particularly a married woman's problem. "Married women," he said, "tell me what they have suffered from ignorance. Hundreds of lives are spoiled that way, and the early stages of marriage are a veritable purgatory for them. I have children of my own, and I would infinitely prefer that they should get their indispensable information from a book, in which a difficult subject is most beautifully worded."

What About the Parent?—The significant aspect of the testimony of nearly

all the doctors called to the stand was the perfectly reasonable contention, implied if not expressed in every case, that the anti-birth control agitators appealed to the public on mistaken grounds of religion and humanity. But is it humaneness to sacrifice the health and sometimes the life of one parent and in innumerable cases the happiness of both parents to achieve a single life which has a doubtful contributory social value? And here lies the crux of the whole question: Where the opponents of birth control consider only the child, the proponents of birth control consider both the child and the parents. It is worth noting, too, that most of the doctors who appeared in support of Dr. Stopes were themselves parents. Dr. Meredith Young, medical officer of health for Cheshire, said that his two daughters had read "Married Love" before they were twenty-one with his sanction. Others gave similar testimony. Dr. George Jones, who said that he had had forty years' experience in the East End of London, expressed the opinion that Dr. Stopes' clinics were excellently kept and run. "To talk of danger," he observed, "is all moonshine. All knowledge is useful." All the usual issues in the birth control question were brought up during the course of the trial and all were competently refuted. The judge from the start barred the religious issue, thus eliminating the most common but, it must be admitted, least tenable grounds of opposition. The charge of indecency was very early proved meaningless. The charge that birth control is dangerous was likewise dismissed, ample proof being offered to show that a lack of knowledge was infinitely more dangerous and more harmful. And finally, the contention that birth control is anti-social was shown to have its origin in the confusion of its opponents' minds. No unprejudiced individual can maintain that the coming into the world of one entity at the expense of two others is good human economy or of benefit socially; and an unbiased individual cannot but acknowledge that any attempt to make the coming into the world of an entity coincide with the best interests, both of society and the two beings who bring that entity into the world, constitutes a marked social service. That, in brief, is the aim of birth control.

The jury at the trial brought in a verdict in favor of Dr. Stopes, maintaining her

charge of libel and awarding her damages. In accordance with the English custom, however, the judge held this verdict in abeyance until he could examine it more closely, and two days later reversed the jury's decision. The jury, tho finding that Dr. Sutherland's published comment on Dr. Stopes' book was unfair, had voted his statements true in substance and in fact. The judge, abiding strictly by the law, ruled that this finding nullified any charge of libel. Despite this ruling, in the view of the public Dr. Stopes had won her case and birth control in England had achieved a justification, which, if not legal, was at least moral.

"Read and Live Long."—France has found a new amusement—the quest of youth. The vogue of longevity has taken hold of the country's imagination, and at a time when living is becoming increasingly more difficult from day to day, everybody wants to live long. Men with a smattering of chemistry are setting up laboratories for the manufacture of youth-giving balm. One such chemist, however, tho announcing the discovery of a balm of amazing efficacy, withholds it from the public, declaring that he will surrender his secret only when the world deserves it. But the vogue is not confined to the general public. Men of science are preoccupied with the all-important subject. Recently, at a meeting of the French Academy of Medicine, Dr. Armaingaud learnedly discoursed to a body of notable savants on the subject of longevity, and, for the entertainment of some and perhaps the edification of others, he announced that he, too, had found the secret of youth. He had no balm to offer, however, no secretly concocted tonics. The magic of youth, the trick of longevity, he declared, lay in the daily reading of the "Essays" of Montaigne. He offered himself as an example of the effects of daily reading of the "Essays," which are an adornment of French literature of the 16th century. As a result of his reading, he had reached a maturity of uncommon robustness and in possession of a contented state of mind not within the reach of many men of his age. "Read Montaigne and live long," was the law he laid down, and he offered a scientific reason for his conclu-

sions in which he emphasized the therapeutic influence of literature. The "Essays," he pointed out, were especially efficient in encouraging longevity, not because they were written with that intention in mind, but merely because their rhythmic structure and their peaceful content had a singular influence on the mind and constitution of the reader.

The action of the "Essays," said Dr. Armaingaud, is extremely favorable to the life function and has the faculty of prolonging one's years, at the same time inducing a degree of contentment which in itself is a factor for longevity. This benevolent action is due to the tranquility which a reading of the "Essays" brings to the mind, bringing a wholesome reaction on the functions of the heart and on the condition of all the organs. "All doctors know," he said, "that the chief obstacle to the practice of hygienic laws is the moral obstacle. Is it not a matter of experience that alcoholism is the consequence of a lack of will in the man who cannot resist the sensual pleasure of drinking alcohol? Do not infectious maladies themselves depend, in large part, on the vigilance and care which are prompted by our will power to increase the resistance, either organic or personal or exterior, which we can offer against the invasion of hostile organisms?" Answering in advance the possible contention that what he says of Montaigne may be said of many other authors, Dr. Armaingaud proceeds: "Montaigne, the great moralist, is the only writer, the only philosopher who becomes for his regular readers an ever-ready friend, who, by the unique form which he gives his reflections, is the only author who can convince and command obedience, because, instead of imposing his ideas on us, he 'whispers' them to us, in the phrase of Guizot." The theory offered by the distinguished French practitioner is an interesting one and, tho hardly revolutionary, presents a novel point of view. The therapeutic value of literature, as in the case of music and the other arts, has long been recognized, but the distinction of Dr. Armaingaud is that he singles out one author as especially inducive of longevity. Until his speech at the Academy of Medicine it has been the feeling of many critics that the chief value of the "Essays" was as a soporific.

The Pathology of Heroism.—Our conceptions of heroisms have undergone some severe changes and the quite human instinct for hero-worship has been confronted with dismaying obstacles in our post-war experience with heroism. It is unfortunate that, since 1918, the laboratory in which the pathology of heroism has been so largely exposed is the criminal court. Both in this country and in Europe, the criminal courts have proved to be a tomb in which many heroes—war heroes—have died an ignoble death, shorn of their bright laurels and revealed in their naked cowardliness. And skeptics have been moved once more to see a closer relationship between heroism and cowardice than the more romantic among us are willing to acknowledge. It must be owned that the mass heroism revealed as a daily commonplace does actually lend itself to the interpretation of the misanthrope. The courage of the soldier is, in no small measure and in no few instances, the courage of fear—fear of one's associates, fear of their opinion, fear of the enemy and of death. With the memory of the war swiftly receding, there is a general tendency to face more frankly the possibility, viewed psychologically, that the conscientious objector, in accepting any form of punishment rather than betray his ideals, was perhaps revealing something closer to heroism than many who obeyed an instinct which yielded as much to the fear of the opinion of associates as to love of country. It requires an immense measure of courage to face the contempt, the hatred and the loss of general esteem which the conscientious objector sacrificed, and it is hard to believe that any social being could lose so much that is indispensable to every human merely for fear of risking his skin.

Just as the psychology of the conscientious objector has been revealed to us of late in a less contemptible light, so the psychology of the hero has been shown to us in a less glorious light. One of the most striking commentaries on war heroes occurred recently in the French criminal courts, when a band of nine train robbers were tried for a particularly brutal and cowardly attack on an express. In the plea of the defense much was made by the attorney for the bandits by the fact that seven of the nine men had served with distinction in the war, had shown exceptional courage in the face of the enemy, and had been decorated with the

Croix de Guerre. Here was a unique opportunity to study the essence of heroism as shown on a battlefield. Similar opportunities have occurred in our own courts, the months following the armistice and the disbanding of our army being particularly notable for the number of former soldiers, many of them with a splendid war record, who were hailed to court as pickpockets, burglars and highwaymen; but the French court presented a group of such hero-criminals, all with an equally fine war record and all equally reverting to instincts which are as far removed as possible, in appearance at any rate, from those which made them conduct themselves so honorably in the battlefield. The study of this group, presenting a variety of humans similar only in the degeneration of their heroism to a criminal brutality of the lowest sort, could only lead to the conclusion that the psychologic essence of their courage was identical with the essence of their cowardice—a general recklessness of life, whether theirs or that of others; a disregard of consequences such as betrays only an utter lack of mental balance, so conspicuously present in the more reflective individual; a ready yielding, more ready than in even the cowardly type, to the instinct of self-preservation at no matter what cost to the social body. The instinct that led these bandits to carry out acts of heroism when facing the enemy, which was after all nothing more than approved and legitimate cruelty because it was committed in a good cause, was just as ready to come to the fore in facing the social enemy. In both the same impulses, the same depravity, the same disrespect of human life and human institutions came into play. The one was heroism, the other was cowardice, but the line of demarcation is a faint one.

Ethics of Referring Patients.—It seems probable that there is more disregard of common sense rules in the matter of referring patients from one physician to another than in any other relationship between doctors. As a case in point, a specialist, who had removed the tonsils from a man having no regular family physician, with the idea of relieving a so-called "rheumatic condition" in the right arm did not obtain the desired result, and referred the patient to an electro-therapeutist for treatment of

the condition, it being regarded at that time as a probable neuritis. The electro-therapeutist erred in the first place in not communicating with the physician who referred the patient, and, after giving many treatments with little or no relief, took it upon himself to send the patient to a dentist who pulled several apparently sound teeth, also without securing relief. The patient then came back to the specialist who had removed the tonsils and his state of mind can be better imagined than described.

One of the common complaints heard in esoteric circles, especially among the younger men, is that established specialists are in the habit of "stealing cases"; that is, a young practitioner refers a case to a consultant or calls in the consultant to examine the patient and eventually finds out that his patient, who has been treated in the meantime by the consultant without the referring physician's knowledge, has been lost entirely.

The rules governing consultations are very well laid down in the "Principles of Ethics" of the American Medical Association and even were this not so, a proper regard for the best interests of one's *confrères* should be all sufficient. It ought not to be necessary to say that one should not put too much credence in the statements made by patients; for many patients who do not understand the reason for certain prescriptions or orders not to their liking which have been laid down by the physician in charge in his management of the maladies, complain to other physicians and are often in the habit of a frequent change of medical advisors. One should turn a deaf ear to insinuations and calumnies; for we are also probably in line for the same sort of criticism, and the patient who is so drastic in his statements is likely to seek further after we have done what we consider our best for his relief.

The following may be taken as an example of proper cooperation. Dr. A, an otologist, was treating a certain patient for deafness who had not been referred to him by another physician, but came in at the suggestion of a former patient. This man had noises and deafness in one ear and he was subject to so-called fainting spells. As he had no family physician the otologist called up a general practitioner of his acquaintance and asked for an opinion as to the general condition, especially as to the heart and cir-

culatory system. The general man, Dr. B, could find nothing tangible and he called up Dr. A, asking if it would not be in order to refer the patient to Dr. C, who is a neurologist. This permission granted, Dr. C reported his findings to Dr. B, giving an opinion that the patient had a possible angle-tumor. It was then agreed between the three physicians that Dr. B, should have entire charge of the case and that Drs. A, and C, should consult together and examine the case alone or in the presence of each other as often as seemed desirable, and they were then to report any new findings or any change in the patient's condition to Dr. B. This arrangement resulted in harmonious cooperation and satisfied the patient that everything possible was being done for him.

A less fortunate example is that of a surgeon who had a case referred to him by a general practitioner whom he did not know. The general man did not call up or send the patient to the surgeon with a note, but simply told him to "go to Dr. X, a surgeon who will fix you up." The surgeon examined the patient, made a diagnosis of appendicitis, performed the operation and collected a sizable fee, but made no report whatever to the general man, who only found out about the case accidentally some weeks afterward. Needless to say, this surgeon is not in good standing with the general man at the present time.

Rules for Referring Patients not Well Understood.—It is curious how few men seem to understand the simple rules which should govern referring of a patient to another physician. No one should ever tell a patient to go to Dr. So-and-So in an offhand way, for any one of several reasons. In the first place, it does not show a proper interest in the person's welfare. Secondly, he is not at all likely to be impressed with the skill and possible good service to be rendered by this unknown physician. Thirdly, he is not likely to go, and if he does he comes in with a swagger and an air of superiority which is sometimes almost insulting and does not augur well for the future relationships of the new consultant and the patient. Physicians are often surprised when talking casually with *confrères* to learn that a Mr. So-and-So, who was referred "to you about a month ago" never has put in an appearance. It is more often the fault of the

sender than anyone else that the patient fails to appear. If the thing is worth doing at all, the proper procedure is somewhat as follows: The sender should tell the patient that his malady requires more thoro and painstaking investigation than he has the time or opportunity to give and that for this reason he recommends Dr. L, who is one of the best in his line of work and will give him all the time and skill at his command in order to determine the diagnosis and treatment. The sender should then either telephone the gentleman recommended, who may be called the receiver, or he should write a note stating in brief why the patient has been referred and asking somewhat as a favor that the patient be examined and treated or referred back as the case may be. If a note is sent it is seldom proper to seal it as any secret information should be sent in a separate note under postage or by special messenger or over the telephone. The receiver, after his examination and after having formed an opinion as to the diagnosis and further management, should report either by telephone or in writing his findings. If it is a question of operation, the operator should, if possible, invite the sender to assist him, or if this be neither feasible nor desirable, the sender should be invited to the operation and should be accurately informed as to the time and place so that he may witness the operation if he so wishes. If the sender assists the surgeon he should be paid a fee for his services, either by the surgeon or by the patient. If by the surgeon, then the patient should be informed that the operator is paying the sender a fee for assisting, but it is not in all cases necessary to name the fee to the patient. If the patient is to pay the assistant's fee, then the surgeon in rendering his bill should take this circumstance into account and give plenty of leeway so that he himself and the sender are sure to be paid. In other words, if the surgeon makes what the patient regards as an overcharge, then the sender is unlikely to be satisfactorily remunerated. The best way for all colleagues is to "lay the cards on the table," so to speak, and discuss openly this phase of the situation in all cases.

An Interesting Case.—Recently, a young otologist was in a good deal of a quandary as to what he should do in the following case: A patient in very good

financial circumstances had a child who came down with an attack of acute otitis media. The young otologist was called by the general practitioner, but hesitated to open the drum because he did not think that conditions warranted it. A few hours later, a prominent otologist was called in at the request of the family without the knowledge of otologist No. 1. His opinion was that the drum should be opened and a mastoid operation performed. He was told that the young otologist did not deem this necessary but that the patient would take the opinion of the prominent otologist in preference and ask him to operate and take entire charge of the case. The prominent otologist, wishing to do the fair thing, invited the younger otologist to assist him, whereupon the quandary on the part of the young man who felt it might be beneath his dignity. He was wise enough, however, to ask advice of an older colleague and was told that he should assist by all means as this might be the means of establishing friendly relations with the operator and later on with the family and friends of the family as well. This advice was taken and it proved good.

To summarize the cardinal principles of what is sometimes a complicated situation, we must all remember that the patient's interest comes first. The physician who sends the case is always in charge unless he gives way to some other physician or withdraws from the management of the case. The man to whom the case is sent is a consultant or temporary manager and should either send the case back to the recommending physician or strive to keep him in the picture in some way. If an operation has been done, the surgeon should refer the patient back to the sender for dressings or future management as soon as safe and convenient. No receiver should carry out any operative measures without first advising or consulting with the sender unless it be a matter of relieving pain or some emergency operative procedure which requires prompt execution and in case the sender cannot be easily reached. If an operation is done, the surgeon's fee should be of a size to permit the sender to be paid for his pre-operative and post-operative work. The surgeon or consultant, or whatever his status may be, has no moral right to call any other physician or even to put nurses on the case without asking or consulting with the sender. It is indeed a curious thing that underneath con-

sulting relationships, there should so often exist a feeling of resentment or of irritation. Unfortunately this feeling does not come out into the open as far as the parties themselves are concerned, but the circumstances are related to other physicians who have no interest in the case in hand except that of an indifferent listener. We all ought to be more open-minded and more generous in our dealings with each other. That is a golden rule concerning which it would be difficult, we think, to start an argument.

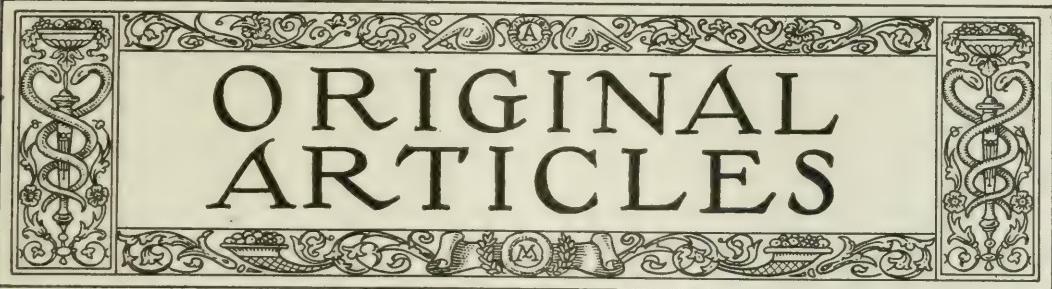
Educational Standards for Physiotherapists.—In a recent article in the *California State Journal of Medicine* (January, 1923), Wilbur expresses as his opinion that the proper training of the physiotherapists of the future will have to be some two or three years of college education as a minimum, including biology, anatomy (including histology), physiology, bacteriology, chemistry and physics, so that we may be sure that they have sufficient knowledge of bacteriology, physiology, anatomy and other fundamentals. To this should be added one or more years of practical work in the hospital clinic with good instructors. All the necessary training in the technical procedures should be under the guidance of the medical profession. It would be a sad thing to banish the physiotherapist from the great medical centers where his influence and assistance are most needed.

Beyond Dark Clouds.

No matter tho we cannot see
The dawn beyond the clouds,
And tho at first we're followed not
By fond, approving crowds,
Keep hope and let us travel on,
In paths we know are right,
If we the torch bearers shall be,
More will behold our light.

So let us ever work and pray—
And right will surely win,
Tho ere we reach the haven bright,
Come many days of sin;
But still a brighter day shall dawn,
When we the storms have passed,
For sunshine always is beyond—
And clouds can never last.

—MARTHA SHEPARD LIPPINCOTT.



ORIGINAL ARTICLES

THE CONSCIOUS, UNCONSCIOUS AND SUBCONSCIOUS.

BY

B. S. TALMEY, M. D.,
New York City.

*"Geschrieben steht 'Im Anfang war das Wort.'
"Hier stock 'ich schon! Wer hilft mir weiter
fort?
"Ich kann das Wort so hoch unmöglich schätzen,
"Ich muss es anders übersetzen.
"Wenn ich vom Geiste recht erleuchtet bin.
"Geschrieben steht: 'Im Anfang war der Sinn.'
"Bedenke wohl die erste Zeile.
"Dass deine Feder sich nicht übereile!
"Ist es der Sinn, der alles wirkt und schafft?
"Es sollte steh'n: 'Im Anfang war die Kraft.'"*

GOETHE'S FAUST.

The study of the psychology of the unconscious or subconscious has assumed vast proportions in recent years, not only among psychologists but also among intellectual laymen. This branch of psychology, therefore, stands in need of a strict definition of the meaning of the unconscious and subconscious, terms mostly used interchangeably. Without question the parent of the unconscious and subconscious is the conscious.

Philosophy knows not absolute nothing. The very idea of nothing is something. Negation stands only in correlation to affirmation. The unconscious and the subconscious presuppose the conscious.

Now, what is consciousness, what is mind? The great difficulty in the definition of consciousness is the necessity for the mind to define mind. Just as there is no

way of compounding the velocity of light with velocities of translation, because light signals are our ultimate resource, so the psychologist in analyzing mind cannot exclude his own mind. It is mind discussing mind, and we cannot properly study thought unless we get outside of thought. There is no beyond-mind to discuss mind. Psychology is the knowledge of the mind which is itself the instrument of knowledge. That which produces mind or consciousness must lie behind consciousness. It is, therefore, inaccessible to consciousness or to the mind of the psychologist. Hence the mental process which originates consciousness cannot be apprehended by consciousness immediately. When consciousness discusses consciousness, the result is a Cretan puzzle.¹

Still the mind is subject and object at the same time—possesses a similar quality as the tactile sense. The eye cannot see itself, the ear hear itself, the nose smell itself, nor the tongue taste itself, but the finger, stroking the table, feels the table and itself at the same time. The mind also is subject and object at the same time. The mind is conscious of its surroundings and of itself. The

¹ When a certain Cretan told the Athenians that all Cretans were liars, the sophist remarked that, he himself being a Cretan, must consequently also be a liar, hence his statement is not true. But if the statement is not true, then the Cretans are not liars, and the asserter is not liar either. Then his assertion is true and the Cretans are liars, and so *ad infinitum*.

mind knows the outside world meditatively by means of the senses, of itself the mind has an immediate awareness. Even if a man would lose his five senses, and thus be entirely excluded from the outside world, he would still be conscious of himself.

Owing to this double quality of the mind, the subjective part may theorize and try to analyze the essence of the objective part. Theorizing is absolutely essential to scientific progress. The mind may imagine and assume something logically improbable. It may imagine a timeless and spaceless non-personal, super-human intellect, endowed with an additional sixth sense, a know-all sense, sitting on some high peak far away in infinity, outside our universe (*sic?*), looking upon the universe before the world's creation. What would such an observer perceive?

With his five or six senses he would perceive nothing, the phenomenal world not being as yet in existence. But with his additional know-all sense he would perceive *Das Ding an Sich*, or the essence of the universe. He would see a timeless, spaceless, indivisible, sole, quiescent, inactive, self-content, ideal essence, enclosing in its bosom all possible representations.² The hypothetical observer would perceive within the infinite sea of energy all the potentialities of future worlds. He would perceive all the unseeable and insensible worlds, the minds of the future plants and animals, the intelligences of men, all floating, so to say, upon the face of the sea of force. He would discern within the sole indivisible aggregate of energy an ocean of ideas, wills, intelligences, and forces of electrons. In fine, he would perceive an omnipresent eternal force, endowed with the attributes of intel-

ligence, will, and conation.

This observer, looking from his vantage point, in lonely solitude, from eternity to eternity, would perceive, by means of his know-all sense, a sea of energy, of intelligent energy—since an energy which could evolve intelligence could at no time have been devoid of intelligence. Hence this energy may be identified with intelligence or logic. The observer would thus perceive a whirlpool of pure force, of pure life, of pure intelligence, or the observer would contemplate the eternal Logos.

At some moment of his eternal contemplation, our observer,³ not bound by temporal and spatial limitations, would notice a change within the Logos. The ideas, wills, thoughts, logi, or electrons, or by any other name these separate selves might be called, became active. Groups of electrons began to move around certain virtual central points and, dancing in vortices of inconceivable celerity, commenced to form atoms.⁴

With the appearance of individual ideas, or subatomic electrons,⁵ spatiality⁶ came

² In explaining the general principle of relativity, Einstein imagines an observer in a box, hanging far away in space, where the law of gravity does not prevail, logically as impossible as our observer outside of the universe.

⁴ The mass of the atom is confined to a relatively minute virtual nucleus at its center. The mass is positively charged, with the bulk of the atom composed of a compensating number of negative electrons, circulating about the nucleus in wide orbits (C. T. R. Wilson). The atom thus represents a planetary model whose volume is even more empty than the volume occupied by the solar system.

⁵ The electrons form an integral part of the atom. The electron, a metaphysical entity, never changes. Electrons emitted from different substances, are identical except in their velocities.

⁶ According to the Talmud, God and Space are identical. *Wayiphgah hamacaum* "And he met with God" (Genesis XXVIII, 11), asks the Medras, "Why does the Bible transcribe the name of God and call Him *macaum* or 'space,' because he comprises all space in His world?" (Genesis, Rabban, sec. 68.)

Baruch hamacaum "Praised be Space," meaning God (Abodah Sarah 40^a). *Hamacaum yihyeh besrau*, "May Space help him," meaning God. (Bech. 45^a.)

² According to human logic and the law of causality, there must be contained in the Cause the sum of all indispensable and sufficient conditions for the emergence of all future effects.

into sight. Individuals exclude each other, hence are limited in space. At the same time with the motion of the electrons, the notion of time made its appearance. Motion lies between two moments, hence conditions time. The atom is thus an objectively posited phenomenon, spatially and temporarily determined. The atom is conceived in time and space. It is a system of electrons, manifested to sensorial perception, a phenomenon, accessible to sensorial perception of temporal and spatial individuals.⁷

The atom represents the first step of the world of matter or of phenomena. While the other manifestations of energy, such as magnetism, electricity, mind or force are timeless and spaceless, hence can only be conceived by their effects mediately, matter is an objective real phenomenon, independent of any sensuous perception. Physical things transcend the mind of the knower. Objects continue to exist when they are no longer seen, touched, or heard. The senses alone tell us nothing as to realities. There possibly may be in existence other worlds not apprehended by the senses. There may be in existence a world limited to one dimension. The senses are not all we have to rest upon in cosmology. There is the human mind which contributes to our knowledge. The phenomenal object is more than a mere passive sensuous scent, it involves judgment and is the synthetic unity of sense-datum and meaning. Altho the appearances upon which an object depends for its reality are conditions by the state of the six senses, the visual, tactile, auditory,

olfactory, gustatory, and kinesthetic senses, still the appearances are accompanied by the conviction of the mind that something, having these characteristics does exist, that its existence continues even when the sentient ceases to perceive the appearances. The "things in themselves" are unknowable. The substance of the thing in itself is most probably unlike its appearance, just as visual and tactile appearances are unlike. Still *Das Ding an Sich* does exist.

Matter represents the phenomenal incarnation of primeval energy, the objectification of Plato's Idea, of Philo's Logos, of Kant's *Ding an Sich*, of Schopenhauer's Wille, or of Hartmann's Unconsciousness. Matter is the materialization of the electron. The electron is nothing physical, it has not even submicroscopic dimensions. The electron is metaphysical, a thought, an idea, a will. But it is capable by the union with other electrons to produce spatial effects,⁸ accessible to sensorial perception and thus evoke the phenomenon of corporeity.⁹ If the electron is the basis of the material atom, then matter is only another manifestation of energy, and physics is the science which endeavors to gain an adequate thought-picture of objective appearances. In the manifestation as matter, energy becomes sensorial; in other manifestations, such as heat or electricity, energy is not subject to mediate sensory experience. We only know them by their effects.

Another representation of energy, not

⁸ Modern physics has found that the mass of the electron is entirely an electrical effect and is due solely to the charge which it carries. The electron constitutes a real atom of electricity, the latter being atomic in structure.

⁹ Space has no existence except as an internal characteristic of the contemplating mind, just as time is only an internal characteristic of the mind, the objects themselves not being really in time or in space. Just as heat is not a quality of the fire but a state of the sentient individual, so are space and time only qualities of the observing mind.

⁷ Duration enters into conscious thought thru the material organ of the brain which requires time because vibrations require time.

Just as the structure of the atom conditions space and time, so is the understanding of space and time provided for in the innate structure of the mind. To the structure of the mind are also due the special faculties shown by individuals in the arts, sciences, and general intellectual endowments.

perceptible by the senses, and only known by its effects, is the mental. The mental effects are most striking in man, but they can be discovered in all matter, organic and inorganic. The mental effect of energy is Steinmetz's "X" (*Harper's Magazine*, February, 1922, p. 296). Only man represents the finest instrument for the playing of the mind, as the Stradivarius is the best violin for the playing of music. Man is the best object for the study of the mind. Energy, mind, and matter are thus three modes of appearance of the one Absolute, of the Allness, of the *Ens realissimum*.

When we return to our observer, he would soon observe atoms combining into molecules and molecules into elements, the elements into nebulæ and the nebulæ condensing into stars, the stars throwing off planets, and on the planets the elements combining into chemical compounds, such as hydrogen and oxygen into water.

At the *status nascendi* of these combinations, there are disclosed three manifestations, one accessible to sensorial perception, matter, the second known by its effect, heat, and the third not yet recognizable, the mental¹⁰ or "X". The observer would then notice the inorganic compounds combining into organic compounds and into living matter, or the cell.¹¹

The living cell possesses three qualities: (1) Metabolism, or the power to assimilate material to itself and to get rid of injurious materials.

(2) Transformation, or the power to change the potential energy of the

¹⁰ When two gram molecules of hydrogen and one gram molecules of oxygen combine into two grams molecules of water, there is produced 293,000 joules or units of free energy, perceived as a flame, heat, or explosion, besides a certain quantity of mind which Steinmetz designates by "X", or $2H_2 + O_2 = 2H_2O + 293000j + "X"$.

¹¹ Sunshine found in the colloids, nitrates, and carbon compounds better materials to store up energy. After inconceivable ages the plant-cell was produced.

food into kinetic energy for the muscles.¹²

- (3) Reproduction, or the power to propagate the kind. The live cell thereupon evolved into plant and animal, till it reached the state of man.

All these changes from the electron to the dawn of life until it reached man would take place for our timeless and spaceless observer in the space of a moment, like a flash of light. If a man whose time perception is a hundred thousand times slower than ours could see, as Steinmetz puts it, within a short time a tree being planted, growing, and dying, then a being with a time perception a billion times slower would see a glacial epoch within the fraction of a second, a flash, and all is over. Our observer standing beyond time and space would perceive the duration of a thousand million of our years in a moment, nay, in less than a moment, for a moment is already time. In less than a moment the electron advanced to the state of man.

With man's entrance into the world, personality or the conscious Self made its appearance. Man not only recognizes immediately the effects of mind in others, but he has immediate knowledge of his own mind. He is conscious of his consciousness. His mind, consciousness, or Self is for him a reality. Reality is an absolute postulate as the condition of knowledge. "I think" is absolute. "I think" affirms an existence, secure from doubt. *Senseo ergo sum*. The world of things is only phenomenal for man. He learns to know it by his senses. Even our souls are impenetrable to one another. Certain signs of passion are all that we ever apperceive externally. These we interpret by analogy with what we have ourselves ex-

¹² Plants convert the kinetic energy of sunlight into potential energy of food stuffs. The animal transforms again the potential energy of the food into kinetic energy of the muscle.

perienced. But when man says "I" he knows the personality which the "I" represents—in fact, the Self is the only reality known to him.

Nothing is so real as one's Self. Altho we cannot sense it, still the Self is truly a fact. The subject Self is existent and real. I am I, is an axiom in psychology. We can observe our own mind, altho its exact nature is a mystery to us—in fact, we can observe our own mind only. The state of the other individual's mind always remains a matter of conjecture. I know myself from the state of my mind.

All thoughts, feelings, wishes, perceptions do not constitute the Self. They are events happening in the Self. In its development and growth the Self is built up out of stimuli which act upon "it," hence the "it" must be given, must be a datum. The soul of the child is drawn from the well of the cosmic soul. Whatever the Self may be,¹³ it is not the physical organism as such. It is not the phenomenal side of the organism. Altho there exists a relation between the physical organism and consciousness—a break of harmony in the synthesis of the different mentalities, feelings, or emotions causing instability of the Self—still the Self must not be confounded with its representations. The Self is divine in its essence, it is the directing idea which presides over the maintenance of personality, it is uncreated, it is eternal, it is immortal, it is indestructible.

¹³ The thesis of the writer, as will be seen later, is that the Self, mind, or consciousness represents the sum total of all the electrons, composing the organisms. In this sense the Self would naturally be identical with the physical organism. Still the Self is not the sum total of the phenomenal manifestations of the electrons, as disclosed by the way of the atom, but is the sum total of the mental sides of the electrons, the electrons, disrobed of the atom, being themselves only minds, wills, intelligence or forces.

Man remains himself in spite of all the variations of the contents of his body and mind.¹⁴ In its perpetual becoming, the Self still preserves its unity, its "I". It is conscious of this unity.

The Self is known to the Self from the state of consciousness. Self-consciousness is a special application of consciousness to the inner cause, personality, subject, ego, or mind. The Self is a composition of primordial powers, innate faculties, and intellectual aptitudes. The soul is a product of metaphysical essence and physical sensations.

The function of the Self is to centralize and direct the psychologic whole. The Self is the centralizing psychic direction of all mental representations. The Self retains integrally all the remembrances of all its acquisitions and assimilates them to itself. Within the Self reside all the past states of consciousness, all experiences and acquisitions, not only the ontogenetic but also the racial and cosmic.

Each electron has a self and will of its own, but is controlled by the higher Self, or the will of the atom; and the wills of the atoms are controlled by the will of the cell. Every single cell has a specific existence, belonging to it alone. The first sensorial traces of consciousness are found in the cell. The material part of each cell possesses the faculty to grasp any substance within its reach and assimilate it to its own body, the mental part of the cell possesses the faculty of retaining every stimulus within the reach of its influence and of assimilating it to its Self. When cells coalesce to form an individual of a higher order, this individual

¹⁴ Man, as a corporeal organism, may lose a great part of his body, all his four extremities, his eyes, ears, etc., or as a mental entity, he may lose his intelligence and become a paranoid, still he will remain conscious of his Self and will continue to speak of himself as "I".

or organism or community of living cells controls the wills of these cells.¹⁵

The soul of every organized association is a composite of the souls of all its members. Still this composite soul differs from each individual soul. Every individual knows the aim, end, and purpose of the organization, but the head of the organization does not necessarily know the activity of each member.¹⁶

The member of any organization¹⁷ is supposed to know all the activities of such an organization and all its necessities. Still the personality, the soul, or Self of the organization might have only a faint aware-

¹⁵ The fundamental activity of the organism's consciousness consists in coordinating the activities of the different cells and all events. In this coordination there are four axes, three in space and one in time, whereby the mind is able to fix the "space-time-instant" of every event.

¹⁶This would explain why man's Self is usually unaware of what is going on within his own body, such as metabolism, etc.

¹⁷ The soul of the bee-hive is composed of the souls of the individual bees. Each bee knows the requirements of the hive. They know the necessity of building the cells, of preparing the honey, of taking care of the eggs. They know, *e. g.*, that if a new queen had been hatched already, they have to kill the drones to save food, but if the new queen has not as yet been produced, they have to let the drones live. Each individual bee knows its duty. Still the hive as such does not know the working of each bee, which flowers it frequents during the day, whom it stings, and by which road it returns to the hive. If half of the swarm would not return at all at the end of the day, the administration, will, and purpose of the hive would go on as if nothing had happened.

The leader of an orchestra may not know how to play each instrument of his band. He does not know the minds and the doings of the individual members of the band. Only disturbed harmony does affect him. But the members of the orchestra all know the meaning of each motion of the leader's baton. They all know his coordinating power, he does not know their individual powers.

The same is the case with the different organs of the body. Like the musicians within the orchestra, the organs have the quality of possessing within themselves the conditions of their specific functions. But if the autonomous organs are required to function in harmony to the benefit of the organism, then a new principle of coordination and regulation must be added.

ness or none at all of the doings of each member. Still the health and existence of the organization depend upon the right willing and acting of its members. When such an organization ceases to exist, is dissolved, each member may remain intact.

Thus when the atom would be disintegrated, the electrons would remain intact.¹⁸ The atom represents an organization. It is a phenomenal Self, a personality and in possession of its own consciousness, which is a composite of the minds of all the electrons, of the separate logi, or of the intelligent energy. The Self, personality, or consciousness of the atom is conscious of its own Self, but not of the Selves or minds of the electrons.

When atoms combine to form the cell, then the atomic minds constitute the consciousness of the cell. The atoms are conscious of the cell or the head of their organization, but the head is not meditately aware of the activities of the atoms or of the doings of the electrons. Their consciousnesses remain unconscious to the Self of the cell. The Self is conscious of the collective consciousness but not of the separate consciousnesses of each atom or electron, while the Self of each atom or electron is conscious of its own consciousness, the electron, the conscious, the idea, or the Logos being identical.¹⁹

The same thing is repeated when several cells combine to form a multicellular plant or animal. Every cell within the plant or animal is governed by two impulses, by the impulse of the preservation of its own individuality and by the impulse of the pres-

¹⁸ The entelechy, the vital force, or the thinking, self-directing agency of the electron is indestructible. The electron is uncreated, immortal, eternal, hence the principle of the preservation of energy.

¹⁹ This explains how thoughts can manipulate matter, both are identical.

ervation of the host. The liver cell, *e. c.*, seizes the food, brought within its reach by the lymphatic system, and assimilates it for its own maintenance. At the same time the cell secretes bile for the benefit of the organism.

During the double transformation of chemical compounds, a quantity of heat-energy and mental-energy, Steinmetz's "X," is set free, so to say. The original innate impulses, transmitted to it by the atoms or rather by the electrons, for in the universality of things there are only electrons in temporary groupings, in ephemeral manifestations, accessible to sensorial observation, the original innate impulses and the constant setting free of mental energy by the cellular metabolism constitute the cell's Self. This Self is not a duality, it is a unity, both the innate impulse and the free mentation, or the unknown mind, the "X," have their source in the cosmic mental energy, in the eternal, uncreated, indestructible Logos, in the metaphysical essence.²⁰

The Selves of the cells of the organism constitute the organism's Self, its mind, its consciousness. The mind of the organism represents its conscious consciousness, while the minds of the cells, composing the organism, the minds of the muscles, of the glands, etc., represent the unconscious consciousness, or the unconscious Self which conscious consciousness does not know immediately but only immediately, by its effects. The unconscious is known by means of causality, it is the cause of all events. The Self of the entire organism, or the entity limited by space and time represents the material and the mental manifestations of

one and the same logical energy which has become conscious of its consciousness.

The association of the Self with organic and material life is strictly spoken a tautology, matter being only the mental imprint of the All-Self. Evolution is thus the enlargement of the field of consciousness. The sphere of consciousness is steadily enlarging from the electron, atom, molecule, cell, multicellular individuals up to man. Evolution means a growth from lower to higher planes of consciousness.

What is consciousness in one stage of evolution passes to the unconscious in the next higher stage and becomes there an instinct. The consciousness of the higher stage appears farther advanced than the preceding lower stage until it reaches the human consciousness. All these stages are in reality only appearances, for the electron, the permanent and real underlying cause of matter, possesses the same consciousness in all stages of evolution, the electron and the conscious, being identical in every stage as it was in the primordial antimaterial stage. Every material stage is aspiring to reach that higher stage of consciousness within the phenomenal world as it possesses in reality as the "Thing in Itself"—*Das Ding an Sich*. To evolve is to reach consciousness in the manifestation as it possesses in the essence. Matter being temporal and spatial, is illusory as time and space, it is only a manifestation of the essential, permanent energetic Logos which alone is real.

The Logos, or intelligent energy, is the sole being in the universe, the individual only a ray of the Logos, an appearance which passes. The Logos is non-temporal and non-spatial, or it is rather omni-temporal and omni-spatial. Timelessness does not negate the reality of the present, it only affirms the unreality of the past and future.

²⁰ For the timeless substance is only a manifestation of energy accessible to sensorial perception. The substance appears as an objectification to such mental objectifications which are themselves limited in space and time.

The Logos is ubiquitous, everywhere active in the smallest details, in all the physiochemical laws of nature. The interpositions of the Logos are determined by logical necessity from eternity to eternity, hence according to law. The Logos, not having any relation to time, has no beginning nor end; just so is the electron everlasting existent, being a part of the Logos. The Logos rules forever, and this rule is mirrored in man's consciousness, man's mind being the phenomenal form of the all-embracing primal intelligence or Logos.

"In the image of God created he him."

The whole diversity of the world acquires existence thru the perception of man's consciousness. All individuation is a mere subjective appearance, says Schopenhauer. The individuals are only activities of the one essential energy. The All-one or the Logos has nothing outside itself. Matter and individual minds are only representations of the Logos on the material plane, matter and mind are the objectifications of the creative immanence. Hence the destruction of the individual is impossible. Death does not exist. Death is only a change in the material manifestations, a phenomenon as matter itself.

Consciousness linked to the individual, being a phenomenon like the individual himself, is hence in its essence indestructible. Only as a phenomenon the mind, at death, disappears from the sensorial perception of another individual who is himself a temporal and spatial phenomenon. The disappearance of personal consciousness is only a disappearance relative to another personal consciousness. In the eye of Plato's idea, of Spinoza's *natura naturans*, Kant's *Ding an Sich*, Schopenhauer's will or Hartmann's unconscious, it is not disappearance at all, the thing in itself not being limited by the senses.

The Self or the directive idea which presides over the maintenance of personality, being only a manifestation or objectification of the general Logos, idea, or will, when it leaves this objectification, when it returns, so to say, to the original, general primordial consciousness, this individual Self becomes omniscient, not bound by time and space, just as the Logos whence it came. Hence, becoming omniscient, it must also know and be aware of the period when it appeared as an individual. In other words, personal consciousness or the psychic personality is remembered, hence indestructible.

Death is only the dissociation of the groups of electrons, not their annihilation. When the metabolism within the group, whether animal or plant, ceases, the mentation of the individual group ceases to manifest itself as a group-mentation to sensorial observation of a reflective onlooker. But the psychic personality, or the *Ding an Sich* which underlies the appearance of the object of perception, not confined to space or bound by time, does not cease. It is merged into the All-being, the absolute individual, the Logos. Only the corporeal form disappears, what is real and permanent in the individual, the psychic mechanism, becomes detached from the usual representations and remains. The factitious transitory groupings which represent individuation disappear, but the electron which is a part of the Logos is indelible and eternal.²¹

Matter, being an incarnation of the Logos, it follows that individual consciousness,

²¹ For this reason the annihilation of the individual is a matter of indifference to nature, because the individual plants or animals are only phenomena not numena, they are pictures on the moving scene, whose presence or absence in the world of phenomena is immaterial. The animal's suffering or destruction which appears so cruel in the eye of the phenomenal human being does not appear so in the eye of the numenon. Hence divine justice differs from human justice.

manifested thru matter, will disappear as a manifestation, when the organism to which it is indissolubly linked disappears. But the eternal essence, being permanent even when temporal and spatial representations disappear, consciousness, being identical with the eternal essence, cannot by its very nature disappear. The non-spatial and non-temporal character of consciousness makes disappearance impossible. The soul as a part of the Logos, not limited by the illusions of space and time, must necessarily be eternal and ubiquitous.

Those who believe that the soul perishes with the disappearance of the body claim that the Self is built up out of stimuli which acted upon a certain "it." But the mechanists cannot tell what this "it" is. The brain-cell to perceive must possess the quality of perception before the first stimulus acted upon it. Whence came this faculty of perception? Intelligence may accompany the development of the individual. It may be true that *Nihil est in intellectu quod non prius fuerit in sensu*, but perception must be a datum before the senses can have any effect upon the brain.

For the materialist consciousness is composed of concepts, or pictures of sensations, recalled to memory. But memory is itself a consequence of the essence of consciousness, hence cannot be the basis of consciousness or cause it. The quality of perception and the capacity of memory remain the *qualitates occultæ* in the nature of the human mind. Besides this, the doctrine that the mind is only the interaction of atoms is not acceptable to logic. Interaction demands a unitary consciousness as a subject. Hence unless a directing, centralizing principle is creating the Self, intelligence could not develop, and this directing principle must exist in all things outside and previous to phenomenal consciousness.

The idealist, on the other hand, who denies existence altogether, who claims that existence exists only for the mind or within the mind, overlooks the law of causality according to which things revealed to consciousness must exist outside of our consciousness. *Il ne s'en suit pas de ce qu'on ne s'apperçoit pas de la pensée, qu'elle cesse par cela*, says Leibnitz (*Nouveaux essais sur l'entendement humain, liv. II, cap. I, sec. 10*). Even the disappearance of the mind according to this principle of Leibnitz, does not negate its continual existence. Hence the table before me, even if it be a mental picture only, must by the law of causality be in existence outside of me to call forth the mental picture of the table. This cause exists, just as time and space, outside of my mind. Space, time, and causality are realities independent of the subjective cerebral perception, or of a conscious subject. They are forms of the absolute energy's activity, they are forms of existence of the All-existence.

Sure enough, only the mind can perceive the outside existence. If there was no mind in which to picture existence, existence would not exist. Still we feel that reality is physically existent, that real things are independent of man's awareness of them. The seeing of the things makes no difference to the things. The seeing is an event which happens to the observer, not to the "things in themselves." The reality resides only in the manifestations of metaphysical force, still the being which underlies the objective appearances does exist. Hence we accept existence as an axiom with which to start. The reality of an objective real world, independent of the perception of a subject, is immediately inferred from sensuous perception by means of a powerful instinct or intuition.

Man has the power of intuition, a direct

vision of reality, of space, of time, not clothed with the categories of understanding. Space, time, and reality are known to man by his primordial consciousness.

The Unconscious.—The cause and origin of every intuition or instinct lie in the unconscious mentation of the individual. From the outset two kinds of instinctive actions might be differentiated. There are instinctive actions which are conceived and executed solely within the unconscious, the Self never becoming aware of their existence. The second class of instinct represents an inward impulse, an unconscious desire without any rational motive for the action and without a distinct apprehension of the aim. But during the execution of the act, the strivings enter the awareness of the Self. The body cells are the chemical laboratories in which the body substances are manufactured and the ferments produced, but of which the Self never receives the least inkling. The manufacture of the hormones, thyreodin, adrenalin, testin, ovarin, etc., is unknown to the Self.

It is not the Self who wills the production of the different hormones. Whether it is Steinach's interstitial cells, the pubertal gland, or the parenchyma of the sex gland that is responsible for the secondary sexual characteristics, this is sure that it is not the Self who is controlling these cells. The cells of the indifferentiated sexual gland of the embryo autonomously and autocratically decide over the male-and-femaleness of the individual without asking the consent of the embryo or of the mother. In the adult, ovulation and spermatogenesis remain forever hidden to the Self. The functions are executed by the subordinate selves of the cells who are conscious of their own actions. But this consciousness remains unconscious to the Self. It is the will of the cells that

decides the individual's fate. Whether this will is called reflex or instinct does not matter. Reflex and instinct are only names somehow explaining the *modus operandi*, but not the driving power behind the action. This power can only be explained by an autonomous conscious will of the cellular selves.

The second class of instincts represents impulses, the cause of which escapes the individual's awareness, while the satisfaction and execution of the impulsive action become known to the Self. In instinctive behavior the organism is unaware of the end thereby to be attained. The starving individual knows the pangs of starvation but is unaware that behind these pains lies the unsatisfied metabolic equilibrium. The individual knows the hunger of sex but does not know that behind this hunger lies the race-preserving impulse. The woman is aware of her menstruation, but the relation of menstruation and ovulation is unknown to her.

The nature, origin, and essence of the unconscious is based upon previous stages of consciousness. The unconscious mentation of the Self represents the state of consciousness of past stages which had passed into the unconscious. The consciousness of the electron becomes the unconscious mentation of the atom, the conscious mind of the atom dwells as unconsciousness within the cell, and the consciousness of the unicellular individual becomes the unconscious in the multicellular animal and in man. There is an eternal continuous transition of the conscious into the unconscious. There is no discontinuity in the mentality of the race. There is not only a physical but also a psychical continuity between the successive stages of evolution. On the psychic plane, evolution represents an enlargement of the

field of consciousness. What is consciousness in one stage of evolution passes to the unconscious in the next higher stage and here becomes an instinct. Every instinctive behavior represents conscious mentation and volition at some other stage of evolutionary history. The conscious of one stage becomes an instinct or a reflex action in the next higher stage. The line of demarcation between an instinct and a reflex action is indistinctly drawn, both are unconscious activities which ultimately must be due to the wills of the cells, which in their aggregate represent the unconscious Self.

The supraliminal Self, which represents the consciousness of the multicellular organization, is only a small part of the entire self. Below consciousness there exists the larger, cryptoid portion of the self, a psychic organization anterior to the conscious Self. The unconscious Self is the cause of psychic life, psychic events, of the play of motives, of the mystery of memory. This portion of the Self represents extinct consciousness, frozen and crystallized, hence the infallible memory of the unconscious. The unconscious Self never sleeps and never forgets, it keeps all integrally.

The consciousness of the cell, tho not accessible to the consciousness of the supraliminal Self, remains intact within the cell even after the latter has given up its independent existence and had become a part of a multicellular organism. Upon this cellular consciousness rest the latent mental activities of the organism. Instinct, reflex action, intuition are the results of the conscious mental activity of the cells.

All subordinate nerve centers or ganglia have their separate consciousnesses of which the organism is not aware. The physiologic automatism of circulation and metabolism, *e. c.*, rests upon cellular consciousness which

does not enter into the individual's awareness.²² The internal relations are regulated by the conscious cerebration of the cells without necessitating any conscious effort of the higher self. The constant automatic processes are going on within our body without rising to the level of the supraliminal consciousness. They are controlled by the subcortical and vegetative centers.²³ The instinctive acting goes on without the knowledge of the ego. The independent movements of the heart, stomach, intestines, the contractions of the arteries, are all controlled by the independent wills of the ganglia. Circulation, digestion, secretion, excretion, metabolism, are not controlled by the conscious ego. The automatic systems of the Vagus and of the vegetative nerves are ruled by the subliminal psyche.

Even where the will for an action starts in the supraliminal psyche, in the Self, the Self wills the action as a whole, the rest is done by the cells. The Self gives the order to execute a complicated series of movements and leaves the details of execution to the unconscious ideation of the spinal cord. The coordination of the body functions is

²² Before a meal, the stomach is of yellowish color, not a single blood-vessel being visible. An hour after meals, the stomach is red, full of blood-vessels. As the food is digested and less and less blood is needed, the caliber of the arteries is gradually diminished by the contraction of the muscular wall, innervated by the vegetative or sympathetic nerves. All these automatic actions of the vegetative nerves, commonly called reflex-actions, are executed by the consciousness of the cells without the knowledge of the supraliminal Self.

²³ The instincts connected with the vital needs of the individual are controlled by the sympathetic or vegetative nervous system. Those instincts conditioned by environment, such as fear, anger, etc., are controlled by the subcortical centers. Other instincts, independent of reflection or personal experience, such as sucking, crying, crawling, walking, fighting, constructing, curiosity, play, esthetics, ethics, religion, parental attachment, social consciousness, altho controlled by the cortex, represent problems already solved by the prehuman ancestors.

carried on by the unconscious mentation. When we will the contraction of the flexor muscles, the relaxation of the extensors is accomplished unwillingly by the ego. When the contraction of the detrusor is consciously willed, the relaxation of the sphincter is an automatic activity.

Every reflex action executed unwillingly by the Self contains the conscious will of the responding conative organ. The cause of the reaction to contact is unknown to and the reaction itself unwillingly by the psyche. The reaction enters into awareness after its execution. The response of the parotis to the sight of food is not willed by the Self. The response enters into consciousness after the act.

Even habits which depend upon the experience and use of the organism, *i. e.*, upon ontogenetic experience, and are originally willed by the self, are carried out by the cells without registering each step in the mind. Once the path has been traversed, and the reflex action has been beaten into a thorofare, the reaction is executed automatically. The Self does not know how he moves his fingers in writing or his tongue in speaking. The Self wills to play music or to dance, the muscles carry out the will. The individual becomes conscious of the muscular actions only when special attention is called upon the actions. All the muscular habitual responses belong to psychologic automatism; they represent the realm of unconscious processes which are accessible to conscious apperception thru their results only. We are not conscious of the action of the muscles while walking, writing, playing music or dancing. While we learn these occupations or arts we are aware of each step taken, of each muscular motion executed. But once they have become habits, we are not conscious any longer of

our actions. Responses in acquired habits are entirely non-cognitive. They are executed by the unconscious mind.

Every cell is endowed with a will or mind of its own. The combined cellular wills constitute the unconscious will or mind of the individual, which is integral of the All-mind. The unconscious ideas, dispositions, tendencies, inclinations, unite every being with the rest of the universe. Unconscious ideation is the source of all instincts which possess also the cognitive side, such as emotional or affective dispositions. Such instincts are teleological impulses toward highly complicated actions.²⁴

Instinct is an action without the real end in view, without deliberation and without conception of what we do. It is a peculiar way of knowing, distinct from intelligence, a special mode of cognition. It is an unconscious knowledge, a sympathetic intuition of life, not acquired by ontogenetic sensuous perception. The instinct of the newborn infant to suck, the great caution and circumspection of the prospective mother in protecting the unborn being, the shyness of pure girlhood, or the woman's general instinct of repulsion in sex matters to avoid blood chaos, or the orgasmic reaction to adequate tactile stimulation are all instincts representing the conscious willing of means to unconscious willed ends.

Instincts are psychical permanent organs. The unconscious idea of purpose is the indispensable link in each single instinctive action. This idea can only be conditioned by the intelligent conscious ideation in previous stages of evolution. Instinct is thus

²⁴ The fear of snakes is a teleologic instinct, which is excited by a dim internal necessity (Kant, Anthropologie, I. §78). Woman's fear of the mouse, the rodent, who attacked her young ones during the cave period, represents also such an instinct.

a previous intelligence, changed into automatic, autonomous unconscious action. An instinctive action being executed without the directing intelligence of the organism, the response for the action must be due to a previous stage of consciousness. Instinctive conduct, representing a certain innate, specific tendency of the mind, common to all members of a certain species, presupposes the coordination of intelligence, interest, attitude, and variation of behavior according to necessity, and the power to learn by experience. Hence it necessitates an ascription of intelligence. Instinct and intelligence are, therefore, concomitant aspects of one and the same psychical activity.

Instinctive intelligence does not dwell in the brain. The brain has a mental conscious destination not a corporeal. A fowl may live and execute automatic activities of the alimentary muscles without a brain. Hence unconscious cerebration, or unconscious mental activity must have been exercised in previous stages under intelligent supervision. Unconscious neurograms of all past experiences must have registered not only all the racial experiences but the memories of the entire past, from the electron to man. The unconscious is the receptacle of all past memories, even of experiences which happened before the evolution of life had started. The past is wholly existent within the present unconsciousness of every human being. The organizing, directing, centralizing energy which forms the unconscious idea thus binds the organism to its past by its cryptic memory.

Upon such memories are based all reflexes, determined by their own separate stimuli. Reflex is the simplest expression of thought in living matter. It represents matter's soul. In higher organisms reflex means memory without consciousness. Re-

flex unconscious action, either the contraction of a muscle thru the mediation of a central organ or the reaction to specific contacts, such as the gastrointestinal secretions or the orgasmic response is executed by the soul and will of the cells without the knowledge of the self. The two main animal impulses, the two pillars sustaining life, hunger and sex, are due to organic sensation, hidden to the higher self.

The entire germinative or procreative process, or the survival of the species, is based upon physiologic, unconscious, innate tendencies, and is not controlled by the organism's higher consciousness. The performance of the Mantis, *e. c.*, in imprisoning air bubbles within the substance where she lays her eggs in order to save her young ones from air starvation is non-cognitive. The Ammophila wasp seizes a caterpillar, stings its motor ganglion where the sting will paralyze without killing, places the paralyzed caterpillar at the end of the burrow it has dug, lays her egg on it and seals the end of the burrow. She then makes use of tools even. She takes up a pebble and uses it as a ram to pound down and smooth the earth with which she had sealed her nest. She adapts means to ends. All these highly complex and purposive actions which she could not have learned by imitation would seem to betray high intelligence. Still they are non-cognitive. Intelligence is the ability to solve a new problem, and this the insect cannot do. For should the caterpillar be experimentally removed from the mouth of the burrow while the wasp is away looking for material to seal the end of the burrow, upon her return, she would not take the trouble of replacing the caterpillar, lying nearby, into the burrow, but will seal the empty burrow. The Mason-bee builds cells of mortar and fills them with

honey. If the cells are experimentally broken before they are completed, she will build them up again. But once completed, she puts in the honey even if the cells are broken, and the honey is running out again. This shows that the actions of all these insects are not carried out by the intelligent higher Self, but by the limited knowledge of the cells, unconscious of the animal Self.

Similar traits, belonging to earlier levels of development may be observed in the propagation of man. The attraction of the sexes is mysterious. Man is only aware of two impulses, that of contractation, or the desire of tactile approachment to the other sex, and that of detumescence or the desire of a specific discharge. But the cause of this erotic instinct, the preservation of the race is not present in man's awareness when he is under the influence of erotic excitement. The basis for the conscious desire for contractation and detumescence is conditioned by the wills of the specific cells of procreation. These wills are at the basis of the entire sexual apparatus. The organization is not the cause of the instinct, the instinct is the cause of the organization and goes back to an immemorial past.

The wills of these same cells control the complicated function of the sex organs. Spermatogenesis and ovulation are hidden from man's knowledge. All man knows of his procreation is the erotic contact, the rest is hidden from him. Still the drama has only just begun. The spermatozoon is hastening at the rate of two millimeters a minute thru vagina, and uterus to meet the ovum within the tube, there to be swallowed up by the latter, just as the monad has done it to its mate eons ago. The ovum immediately after its impregnation by the first spermatozoon surrounds itself with a membrane to block the road for any other

ambitious spermatozoa and starts the delicate complicated process of mitosis to build up the new organism.²⁵

All these delicate actions are willed and executed by the cells without the least knowledge of the Self. The two sex cells sacrifice themselves in the interest of the propagation of the species. The spermatozoon is being swallowed by the ovum and loses its identity, and so does the ovum by being broken up into billions of daughter cells for the benefit of the species.

In the unicellular individual there is a certain antagonism between the individual and the exercise of his procreative powers. This antagonism between individualism and genesis exists also in every full-developed multicellular individual. Still the individual, ignorant of the "why" decides for the genesis against his individualism. Behind this decision lie the wills of the cells. Upon this trait of the cells rest the innate ideas of ethics. All ethical truths are eternal. Ethics like other natural aptitudes or dispositions are elaborated in the dark inner laboratory of the consciousness of the cells and electrons.

Upon the latent invisible fundamental ex-

²⁵ When leaving the ovary the ova are hermaphroditic, they possess both the male and the female determiners. During the passage of the ova thru the tube, by the process of maturation or maturation, some ova throw off the female principle and others the male principle. Each ovum after maturation possesses either a male or a female determiner. In the male this maturation takes place during the transformation of the spermatocyte into a spermatid. Every spermatozoon is hence already sexually determined. The gamete is either male or female.

Hence the male determined ovum will only admit a male determined spermatozoon and will exclude every female determined spermatozoon, while the female determined ovum will only admit a female determined spermatozoon and exclude the male determined. Upon this action is based the differentiation of the sexes. Since each ovum can choose her partner among two to three hundred millions spermatozoa, it is the ovum who decides the maleness or the femaleness of the individual.

periences of man's ancestors, the electrons, rest also man's religious instinct (*Talmy Western Med. Times*, September, 1922). Man is religious by instinct, because the electrons have been present at the world's creation. Man's religious craving is due to the electron's time binding quality or memory. The religious instinct is a component of absolute memory, of the cryptanamnestic memories of his ancestors, his electrons, who participated in the world's creation. The religious instinct is the craving of the Self to participate in the knowledge of his electrons, to unfathom the riddle of cosmic creation and conservation. The electrons, the logi, as Philo Judeus would call them, the intelligences, being non-temporal and non-spatial, eternal, omnipresent and omniscient, not bound by time, are still living in the moment of creation and are hence conscious of their immortality. An atom, being matter, bound by space and time, may disintegrate, an electron never. And the electron knows it, while the organism's Self is not aware of his immortality except in his subliminal consciousness. Certain memory pictures, irradiating from the consciousness of the electrons into the conscious strata of the psyche of the higher Self, proclaim the immortality of the soul. The body will disintegrate, but since time immemorial man had the intuition that his soul will escape the grave.

*Non omnis moriar multaque pars mei
Vitabit Libitinam.*

The religious instinct is the craving of the supraliminal mind to gain the knowledge of the subliminal mind and become omniscient as the unconscious. Man's psyche wishes to eat from the tree of knowledge, to have his eyes opened and be as God, knowing good and evil.

This knowledge is hidden to man. The

Self cannot as yet frame a direct conception of the mode and manner in which the unconscious idea is presented. The unconscious needs no time for reflection, it instantaneously grasps the result. Unconscious thinking is timeless, an intelligible world beyond space and time, opposed to the phenomenal world, valid for conscious thought in time and space. The sensible facts are discoverable by our senses, the insensible facts by our thoughts. The unconscious is only so far in time as the entering into manifestation conditions time. As soon as one of the potentialities enters into manifestation, time begins.

The unconscious manifests itself as intuition, intellectual vision, immanent logic. Intuition is an unconscious teleologic apprehension of a highly complicated situation. All mathematical axioms rest upon the unconscious intuition. We know that the whole is equal to all its parts. The knowledge of three times four being twelve rests upon a metaphysical, preexistent, everlasting truth. This verity is acquired by means of innate intuition. Intuition is the instinct conscious of itself.

Intuition is the basis for many human traits, unexplainable in any other way. Unsullied female purity, her love of dress, her modesty, all rest upon the unconscious. Female chastity is due to the unconscious horrors of blood chaos. Her love of dress is based upon the beauty complex, and the development of female beauty is due to the unconscious impulse of enhancing the stimuli of the distant visual receptors, in variation of the near olfactory receptors of the quadruped.

The hedonic sensation man experiences when contemplating beauty is also due to unconscious intuition. Beauty is based upon the proportion of the divine section, or

the division of a line into the extreme and mean proportion. In this proportion there is an ideal relationship between the whole and its parts, the same relationship in which primordial cosmic energy stands to its parts, the subatomic electrons. The divine proportion is thus the image of the creative power. Man's anatomy is based upon this divine section. (*Talmey, Med. Council*, February, 1908.) The nearer man approaches, in his anatomical structure, the divine proportion, the more beautiful he appears to the discerning eye.

The love of harmony is also due to unconscious intuition. Harmony in music or architecture is also founded upon the divine proportion, and man's love of music is due to the harmony existing between the structure of his own body and the structure of the tone-scale, both being constructed upon the basis of the divine section. All this is unknown to the supraliminal consciousness of man, but is known to his latent, unconscious, omniscient Self.

Unconscious instinct dwells not only in the animal but also in the plant. The sunflower turns its face to the sun. There dwells in the plant a secret intelligence which chooses the most appropriate means for the attainment of the desired end in building up inorganic substances into organic stages which serve for the leisurely consumption by the animal kingdom. To this prepared material the animal owes its higher consciousness, its Self, while the plant possesses only the unconscious Self. The plant shows purposeful behavior. It has its reflex movements. It possesses an organic plastic activity, called forth by the unconscious formation impulse. It has a *vis medicatrix*, or the power to heal its own wounds, and it has an impulse toward the beautiful. In fine, there is an unconscious

psychical influence in the origin of the plant, just as in the origin of the animal.

This psychic influence developed to the highest degree of efficiency in the instinct of the arthropoda and evolved to intelligence in vertebrates²⁶ and especially in man. The difference between the animal's intelligence and the mind of man is one of degree rather than of kind. Man excels only by his exclusive possession of imagination. The animal has no foresight, no hindsight, no vision, no memory.

Subconscious.—The multicellular organism is composed of an aggregation of sentient entities whose aggregate minds represent unconsciousness. Unconscious mentality is thus based upon phylogenetic evolution. It represents the experiences of the race in all its previous stages of development. The subconscious, on the other hand, is ontogenetic in character. It represents the experiences of the individual from the cradle to the grave. The subconscious is the repository of all individual memories. No experience is ever actually lost. Even non-attentive experiences are recorded as marginal experience. The unconscious can never become conscious. We never become conscious of the secretion of the liver. But we may become conscious of subconscious contents by association of ideas, in the hypnotic state, in dreams, and by free association.²⁷

²⁶ When a piece of fruit is placed outside of his cage, the chimpanzee will use a cane, lying within his reach, to bring the fruit near him. The dog would not know what to do with the cane. The ape has thus the power of using categories, the knowledge of the relations of things. He possesses the adaptability to unusual conditions, or he is endowed with intelligence. The vertebrates have thus added to their possession of instinct the category of intelligence.

²⁷ The credit of having called the attention of the scientific world to the subconscious parts of the mind is principally due to S. Freud. Freud taught the world the analysis of the un-

The subconscious is almost exclusively found in man. The animal is mostly governed by the unconscious, by instinct, altho even instinctive acts are improved by conscious experience. The new-born infant, like any other young animal, possesses only unconscious mentality. The circulatory organs know their function even before birth. The respiratory organ knows how to secure the necessary oxygen at the infant's first cry. The organs of the alimentary canal know how to prepare the food. The detrusor and sphincter ani know how to get rid of the waste, the kidney knows how to filter the fluid, and the detrusor and sphincter vesicæ know how to expel the poisonous fluids from the organism. All this knowledge is common to all organisms immediately upon coming into independent existence, and their stock of knowledge seldom materially increases.

It is different in man. From the moment he leaves the womb to the instant he enters the tomb he constantly learns by experience. "I age ever learning more," says Solon. These lessons are stored away for future use, either in the conscious or in the subconscious parts of the psyche, and this knowledge added to the unconscious cognition compose the entity called the Self.

While the unconscious is never recallable to consciousness, the reemergence of the subconscious contents is constantly taking place. The origin of subconscious capacities is sensorial. The cryptanamnesia registers everything coming under our senses.

conscious psyche by the method of free association. Just as according to the law of "reversed effort" we cannot remember a word or a name, we are especially eager to recall, so are certain subconscious tendencies of the mind held down by certain repressive forces. By the study of free association such tendencies may come to light and stand revealed to the keen observer. The knowledge acquired in this way Freud utilizes in the treatment of neurotics.

This registration is indelible. The impressions may be lost from consciousness, but they can be recalled at any time. Even experiences of which we were not conscious when they originated may be recalled. Altho conscious memory is most precise when the fact had arrested our attention, still even experiences, unnoticed by the mind, are faintly remembered, and if not remembered, are still capable of influencing consciousness and conduct.

The past experiences of the Self influence his present state. Subconsciousness represents the unknown recallable realms of the ego. We are only conscious of a small part that exists in our mind. The greater part of the contents of the mind dwells in the subconscious. This subconsciousness is a bottomless abyss into which sensations and perceptions are constantly sinking. Subconsciousness is a repository, especially for all memories, imaginings, dreams, wishes and fears which are out of harmony with the ethical standards of the individual himself or of his group.

Our dispositions, tendencies and inclinations are not wholly inherited. They are to a great extent based upon memory impressions, dwelling in the subconscious psyche. A great number of such memory impressions forms the basis of the individual's character, traits, such as self-esteem, acquisitiveness, secretiveness, curiosity, calculation, firmness, spirituality, erotic anomalies, peculiar tastes, etc. The reasons for all such traits are excluded from conscious thought. All thoughts pertaining to the inner life of the subject are kept hidden as a sealed book. But the subconscious thinking goes on without the knowledge of the ego.

The germ of the doctrine of the subconscious Self is found in many another phil-

osophic system, such as the concept of ratiocination in Hartmann's philosophy (Edu. von Hartmann, *The Unconscious*, Vol. I, cap. 7). But the special merit of Freud consists in the rigorous application of the idea to tendencies in life and individual behavior. For this purpose he introduced six new concepts into psychology: (1) The basic event, (2) the conflict, (3) the repression, (4) the complex, (5) the reminiscence, (6) the defense reaction.

An experience in the life of the individual, such as an erotic event or a tendency such as drunkenness, comes in conflict with the ethical tenets of the individual, and the undesirable hateful contents are put away into the subconscious realms, beyond the limits of memory, or they are repressed. There they form a psychic trauma and the nucleus for a complex. From this complex irradiate reminiscences that struggle to enter awareness. Against this continuous struggle between the subconscious and the conscious the individual builds up defenses.²⁸

Every symptom of a neurosis, every peculiar character trait, every fad has its origin in a psychic trauma, complex, and defense reaction. Thus the purist is generally suffering from the obscenity complex, the feminist from the clinging complex, the prohibitionist from the drink complex, the antivivisectionist from the cruelty complex, the antisemite from the Shylock complex, the socialist from the individualistic complex, the anarchist from the oppression complex, the philanthropist from the sadistic complex, the criminalist from the criminality complex, etc. Every faddistic ac-

tion represents a defense reaction against the reminiscences of a certain complex. Subconsciousness is thus responsible for many a character trait and even for the choice of a certain trade.

The faddist harbors in his subconscious soul desires which he is unable to repress entirely. Therefore he walks in the opposite direction where his unknown desire would invariably lead him. (*Talmey, N. Y. Med. Jour.*, October 7, 1916.) Every automatic behavior tends, as a rule, toward an aim *a priori* unknown to the agent. It represents a certain moral compensation. The complex is thus partly responsible for the laws of human thinking, feeling, and conduct. When we penetrate into the dark, unaccessible, unknown subsoil of consciousness we find there enthroned a complex as the cause of the individual's actions.

Man's will is partly conditioned by certain complexes besides the wills of the electrons. The Self is at liberty to do as it desires to do, but he is not at liberty to desire or not to desire. This is determined by the constellation of the electrons and by certain complexes. "We consider ourselves free because we do not know the causes determining our will," says Spinoza (*Ethics I*, Prop. 36). Our will is dependent upon the complexes and the wills of the electrons, and their wills are bound by the law of necessity which rules the universe.

But not only in the soul of the individual, also in the aggregate human soul certain complexes may be discovered. Within the most hidden nooks and corners of the social soul there dwells a complex secure. When the inquisitive psychologist is looking for the motives at the roots of certain customs, rules, laws and especially of taboos of many a tribe and nation, he will frequently unveil a causal relationship between the reasons and motives and certain complexes.

²⁸ Such a defense reaction, *e. g.*, is overscrupulousness, compensating for laxness elsewhere.

A young patient of the writer, highly religious, twenty-six years of age, masturbates extensively before her menses. This contamination she tries to wash away by continually washing her hands for two to three days, to the despair of her entire family.

If modern psychology would have limited its inquiries to this field of subconscious psychism it would have been able to register greater strides in its development than it actually did. The standpoint of the Vienna school, in regarding the multiplicity of impulses as issuing from a relative unity is quite in harmony with other systems of philosophy. But in naming this primal urge "libido," a term mostly used for the manifestations of sex, the Vienna school gives to this urge a genetic orientation. All instincts are in the last analysis erotic. Every desire, every wish, every impulse assumes in the eyes of the Vienna school a genital significance.

Especially queer and unacceptable appears to the cool thinker the doctrine that the content of the subconscious of the adult represents mostly sexual desires and erotic impulses repressed in childhood. The child has thus assumed the rôle of a sexual dynamo. Every incident in the child's life, its love to father and mother, to brother and sister, is twisted into a sexual meaning. The child's entire life has thus been sexualized. Sex love, as understood by the man on the street, is a love involving the *conjunctio membrorum* or the desire for it. But the Vienna school uses the word libido with its sexual connotation for every interest, desire, urge, instinct, life-impulse, and voluptry. Genitality and erotism are used interchangeably. The attraction between mother and baby-son, called by the Vienna school the Oedipus complex can surely not mean a desire for a *conjunctio membrorum*. No boy of six, the masturbator included, knows anything of an intromission into the pubal cleft. Still the love of son for his mother or of the daughter for her father has been stamped as the incest complex, and incest, if it means anything, means *conjunctio membrorum*.

Upon this abhorrent sexuality of the child²⁹ rest the entire doctrine of dream interpretation, of its symbolic meaning, and its censor. The devotees of this school are constantly distilling sexual complexes. Hence neither the innocent dream of sleep, nor the dream of the poet or of the myth escaped sexualization in their hands. With his psycho-analytic tools the pseudo-psychologist tries to fasten his terrible tentacles onto this aspect of literature. The heroes in the masterpieces of the world's best literature are harboring in their subconscious psyche a secret consciousness of guilt. Hamlet, e. g., has incestuous desires, and these desires represent infantile reminiscences, teleologically repressed.

Repression has been well known even to the man on the street, but not in Freud's sense. We all try to get out of our mind disagreeable experiences. This repressed matter lies near the surface of consciousness and is capable of being recalled, if evoked by the association of ideas. But this kind of repression is not a biological defense mechanism and does not deal mainly with the sexual imperative as in the Freudian doctrine, according to which the sexual factor is the main basis upon which the subconscious rests. When a prominent Freudian maintains that the subconscious consists of matters chiefly of a sexual nature, not fit to print, when Freud himself claims that the content of the subconscious is thoroly objectionable, shocking, disgusting, repulsive, abhorrent and vile to the point of being unthinkable, then the Freudian cannot maintain that he is taking the word sexual in its broadest sense, that

²⁹ No animal before puberty, altho free to exercise its sexual powers at the will of the partners concerned, without any restraint by the group, shows any signs of sexuality. Only the normal human child is thinking of nothing else but genitality, as seen in Freud's analysis of a five year old boy.

his libido is no more than the *élan* vital of Bergson. You cannot operate with such a concept as libido soon to mean sensual pleasure, soon cosmic force. It means either one thing or the other. The philosopher of vital force does not speak of the egotistic, sensual, barbarous nature of the infant which is the essential trait of the Freudian doctrine.

Even if one agrees with Bleuler that the subconscious does not remember, or reason, or know, or think, that it only wishes in symbolic or picture form, why should such wishes be only for genital satisfaction, why should the subconscious wish object be only eroticism? There is ample room for a psychology of the subconscious and even for psychoanalysis of man's emotional life without attributing to every chance action a betrayal of a repressed erotic desire, such as the abominable castration complex of a child of two years or defloration fantasy of a pure girl of fourteen.

Psychoanalysis, even with the Freudian hocus-pocus or without it, is the proper study of all man's feelings, beliefs, attitudes, interests, the modification of his thoughts and his conduct, his mannerism, his standards and judgments. There is no need to give to every desire a genital orientation. Man has other desires besides his organic needs, such as food, drink, elimination, shelter, and sex. He has also the desire for security, the desire for new experience, the desire for recognition. Such desires might also lie behind subconscious wishes.

There is no necessity that something of a sexual painful nature must lie behind every forgetting. We do not seldom forget an algebraic rule, which forgetting is surely not complex-determined. By the law of "reversed effort," the more we try

to remember a name, word, or melody, the less we succeed, the more we seek to sleep, the less we find it. If the Freudian psychology had limited itself to the explanation of psychoneuroses, it would have found general acceptance. Most psychoneuroses are due to mental conflicts and repression, the symptoms being compromise formations. But even the neuroses are not all due to repressed sexuality. They have not seldom a prenatal basis, indicating a chromosomal determinant.

But to take a neurosis as a model and by the method of free association construct an elaborate structure around the emotions and feelings of the normal man is abhorrent to this normal man of the world who has no aspirations to high mountains and far distant perspectives as the neurotic has. The normal man's desire is to eat and sleep the sleep of the just, to work, or to barter. The Freudian structure is built on sand and is bound to collapse and to bury under its ruins repression of infantile sexuality, displacement, transference, distortion, sublimation, dream interpretation, etc.

The subconscious mind is nothing more or less than the part of the mind below the threshold of consciousness, which may be successfully appealed to by the association of ideas, by suggestion, or by hypnotism. The subconscious mind harbors all the life experiences of the individual which are partly the determinants of his personality. There is an interaction between the subconscious process and the unconscious bodily process. The subconscious influences most of man's conscious thoughts, emotions, desires, and strivings. The conscious, unconscious, and subconscious are the ego-components of man, the ego-ideal.

GROUP DIAGNOSIS BY THE GENERAL PRACTITIONER.

BY

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Consulting at the Emergency Hospital,
A. M. A., etc.

What a misleading title, misleading in thinking it could be possible for any one man to be able to do justice to an extent of perfection in the diagnosis of close to four thousand different diseases to which human flesh is heir. But, on the other hand, it is an absolute necessity that a certain number of the medical profession, on account of the location of their clientele or otherwise, must do the best they can—in other words, continue in general practice.

Medical science has made some valuable strides forward during the past few years, but cool, deliberate thought on part of the physician, and incidentally the patient, must convince them it is far from a state of perfection as yet. We are still to a great extent wandering in the dark, and if we would only admit it, the words of the late Chief Justice of the U. S. Supreme Court was only too true, "A medical diagnosis, even by the most expert is little more than a good guess."

Of course the physician is blamed for all the failures to bring about a cure in the ill; to a great extent this is a serious mistake. The writer would not wish to belittle the laity, but when the mind of the average person is up for scrutiny today, and especially during the past four or five years, is it not a fair suggestion to make: many of the ailments that we see, and especially those seen in our offices (ambulatory) have no firm

base to stand on. Not that these people imagine their troubles, but that they do exaggerate them out of all proportions, there can be no question, in the minds of the examiners.

There can be no doubt that the general practitioner, even tho he be located far from a medical center, is as keen on the absorption of knowledge as is the city man with all the advantages of hospital and laboratory affiliations or advantages. No comment need be made as to the knowledge disseminated today, but one thing is quite evident—too much credence should not be given all that is written or heard.

But looking at the subject from an impartial standpoint: The general practitioner was originally the general specialist; the general practitioner is a being that cannot well be dispensed with. He is as necessary an adjunct in the treatment of illness, as are drugs and splints.

In the case of the human being, when ill, two important questions are at stake: What is the diagnosis, what is the cause?

As a primary consideration, disease may be divided into two classifications: Functional and organic.

Organic disease has an underlying pathologic change that is always present; it may be inflammation, due to infection; injury; new growths, etc. There are definite symptoms which, generally speaking, are located at some specific spot, and this in the locality of the pathologic condition. Among these symptoms are fever, increased pulse rate, possibly a characteristic expression, as will show fever, malignancy or the like.

One other important symptom (it may be present to a greater degree in functional conditions—this will be considered later) is pain. Unless the patient be of a highly neurotic temperament, the pain of an or-

ganic condition is generally not only located near the site of the cause, but it is stationary; it is increased by pressure or movement.

In the functional condition we see an almost entirely different picture. The large number are ambulatory; they complain of pain, which is generally of a migratory nature. It may be neuralgic, neuritic or myalgic; here today, some place else tomorrow, and pressure or movement rarely increases it.

Fatigue is another very important and always present symptom; they are tired all the time, yet they appear, physically, in the best of health.

Unnatural discharges; leucorrhea in women, and catarrhal conditions in both sexes are very common. Headache is a very frequent accompaniment, fully 75 per cent. of headaches are of a functional nature, and altho glasses may be indicated, and give relief in some cases, it is only a matter of a brief time until the head symptoms are as severe as before; in many cases glasses do not relieve at all.

Until very recently it has been the teaching that functional conditions have not had any definite cause. People were not recovering, which led to a further search for a cause. Infection from a local focus was brought forward, and now it all depends upon who is seen, whether the seat of infection is found in the tonsils, teeth, sinuses, abdominal viscera or genital organs of the female; in fact, no structure of the human body has been missed as a possible seat of the offending bacteria.

Millions of words have been written, and lecturers have talked themselves dumb on local foci. Possibly millions of the public have submitted to extraction, tonsillectomies and the like, but a good large majority have received no improvement; in a great many

cases it is very evident that the patients find themselves in a worse condition after the operation than before.

Even tho a patient may recover after some effort on our part, be it medical or surgical, we should not be too sure that it is always due to our applied knowledge. We must not forget the greatest physician the world has ever known, nature, and there is great truth in the saying of Russell, "Ninety per cent. of people recover from illness, even tho the diagnosis and treatment by the physician is wrong."

But there is a thought that the physician may harbor that gives much consolation; when we find what we think is the true cause, and it is remedied or removed and the patient recovers promptly, we may safely say we were correct.

As disease may be looked upon from two standpoints, organic and functional, so also may we to a great extent look upon the cause, physical for the former and mental for the latter.

The word mental is used because practically all the symptoms of the functional variety are due to either a want of resisting power or energy; resisting power and energy are furnished the human body from the brain.

It is known that the blood has a nutrient, a food so to speak, and a want of this nutrition, hemoglobin, is known as anemia.

The nerve-cells also have a nutrition, phosphorus, lecithin and nuclein. A want of these substances is accompanied by a train of symptoms, at times hard to classify, but may involve any and every part of the body.

The food for the nerve-cells, as the nutrition of all parts of the body, is taken from the food we eat. Following this nutrition from the mouth, by a process of digestion and assimilation it reaches the nerve-cells

where, after being utilized, the residue is passed off, mainly in the urine as phosphates.

There are two varieties of phosphates found in the urine, the earthy, found in freshly passed urine, or may appear on boiling, and the alkaline, which are never observed, except after precipitation. (The earthy have practically no clinical significance, and unless they are present in quantities sufficient to cause marked turbidity, they may be dropped from further consideration.)

Estimation of the alkaline phosphates, known as the Phosphatic Index, is a very simple procedure. Use the second sample of urine passed in the morning. Fill phosphatometer with urine to U, add solution (Magnes. sulf.; chloride ammo., aq. ammo. 10% of each one ounce, water 8 ounces, filter, let stand a few days before using) to S, shake thoroly and set aside for ten minutes.

A white precipitate should form at once, which will sink in the phosphatometer according to the amount present and the specific bravity of the crystals.

If it reaches NP, and in a practically solid mass, the nerve-cells as a factor in the production of any condition under consideration may be eliminated; in other words, look for the cause elsewhere.

G. W. Very bad attack of neuritis; pain at night very severe. All sorts of medical treatment; aspirin, electricity, massage and the like gave no relief; an index was taken which showed NP, with crystals normal; there was no excess of uric acid present. Advice was given that the condition was probably due to pressure; a surgeon was consulted. This was found and removal relieved the pain at once.

(Six weeks of intense suffering could have been saved this patient, had the index

been taken when the trouble started.)

When the precipitate remains above NP (phosphatometer) in a solid mass at the end of ten minutes, irritation or hypersensibility of the cells and neurones is present. Finding such a condition in any case, sedatives are indicated, such as valerian, the bromides, etc., if acute. If the case is chronic, of long standing as is commonly found in high blood-pressure, the bromide of gold and arsenic is the drug *par excellence*.

Case I.—Mrs. G., age 37. Neuritis involving the brachial plexus. The condition had existed for a long time; she had a blood-pressure of 180. This lady had undergone treatment almost constantly with no apparent relief. The writer, seeing her in consultation, found no pathologic condition. The index was 150% plus. The bromide of gold and arsenic was ordered, ten drops in water three times a day, increased one drop a day to 18 or 20. This drug is a little slow in action, it was about two weeks before much change was noted, but at the end of three weeks, pain had entirely ceased, and pressure was 145; neither pain nor pressure had returned in five years afterwards.

A precipitate that goes below NP or does not sink at all, but is light and fluffy, is called minus and indicates a want of nutrition in the nerve-cells.

When such a condition is found, and it is one that will be evident in fully 70 per cent. of all cases, medical or surgical, the most rapid and permanent results will follow the artificial administration of nerve-cell nutrition, phosphorus.

But a minus index goes a step further than functional condition. All energy, motion, and tone for the tissues is supplied from the brain; in organic conditions where resolution is slow or comes to a standstill, the index in a goodly majority of cases will be found minus, and the use of nutrition will be followed by the happiest of results.

Scores of cases could be reported, where after most carefully applied treatment, results did not follow. An index being taken, medication being given as indicated by the phosphatometer, improvement was almost immediate and permanent.

Case II.—Hon. R. L., age 47. For a long time distress following eating, this being accompanied by gas. At times bowels very constipated, again diarrhea, ejected matter very stringy, as he described it. (Colitis?) Accompanying the distress at times there was pain to a degree that a cordial was necessary; at the same time there was always more or less backache and shooting pains in the head (neuralgia). On seeing him I was told there had never been fever, chills or any direct pain over the appendix, yet the trouble had been diagnosed as appendicitis after tonsils, teeth, etc., had been found normal. An index was made at once; 90% minus with crystals B, showing great nerve-cell starvation; there was large amounts of indican present. The following was ordered: Caroid grs. 40. fl. ex. valerian 1 oz., mixture phosphorus¹ 2 oz., half a teaspoonful in milk half an hour after meals. He reported to me in two weeks: No distress after eating, no gas, bowels regular, no pain, feeling well and gaining in weight.

(During nearly six months of group diagnostic examination, it had cost this man nearly \$150.00 with no result.)

Case III.—Judge H., age 60. Following an acute attack of intestinal indigestion some nine months previous to seeing the writer, he had lost 60 pounds in weight. Diarrhea varied with constipation during all this time; he was greatly emaciated. Altho the urine was greatly decreased in quantity, he was obliged to arise four or five times at night to pass the same; the prostate was normal, to the finger. His most troublesome symptom was gas, and to an extent that at times he had difficulty in breathing, altho the heart was normal in every way as was shown by examination. Examination of the urine showed albumin (in the absence of casts, pus or heart involvement, this was undoubtedly due to anemia). Large amounts of indican was present, an excess of uric acid and free crystals of the latter. The index was NP, but owing to the great decrease in urine this could not be taken with much seriousness. The judge was placed on Basham's mixture at once with orders to report in two weeks. At this time the albumin had practically disappeared; indican was practically normal in amount; no excess of uric acid and no free crystals; the gas had ceased to some extent, and the bowels were moving twice a day. Another index was taken; 70% minus (the urine had doubled in quantity); crystals B. A mixture as mentioned above was ordered to be taken after meals. In two weeks he reported as greatly improved; practically no gas; bowels regular; he was going back on the bench.

The diagnosis of this case seems quite clear: Malassimilation with a defective metabolism due to anemia and neuroinidia.

437 Franklin Street.

¹ Nux vom., can. ind., free phosphorus. Originated by the writer for use in hospital here; it is almost impossible to obtain free phosphorus on a prescription from a drug store.

A VOYAGE TO SOUTHERN LANDS—TEGUCIGALPA.

BY

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Pukoo-Molokai, Hawaii.

At this time there are no mosquitoes here, altho rains are on, and two rivers flow thru the city, the Choluteca and Chiquito.

There is a fairly good sewerage system, and good water is brought from a distance, so that a little filtering makes it potable.

Dr. Wilson, a bright young physician in charge of the Rockefeller Foundation here, tells me that most of the water in Central America is not safe to drink unless boiled or disinfected. One halazone tablet is dropped into a quart of water, making it, I confess, rather poor stuff to drink.

At Guatemala City there is considerable typhoid traced to the drinking water. Here, occasionally cases occur, always imported, Dr. Wilson says.

Hookworm, of course, is prevalent, but not to the extent at first supposed. Much of the tropical anemia attributed to this disease has been found to be due to malarial cachexias.

It is very difficult for one living here and travelling about thru the country lowlands to avoid malarial infection. While the house or hotel may be screened or the beds have nets, you may find yourself in some interior valley without provision against the mosquito which is infected. So the vicious circle is completed.

Dr. Wilson himself, altho out of a malarial region, was suffering from a feverish condition which he attributed to malaria, and everybody, I find, takes an occasional dose of quinine, say 10 to 25 grains at intervals of 15 days or so.

Dr. Wilson has kindly furnished me with some data regarding hookworm in the

various cities and villages of Honduras, which may be interesting:

	Examined.	Infected.	Per cent.
Nacaome	170	125	74.8
Amapala	241	184	76.3
Choluteca	212	188	69.0
San Lorenzo	48	36	75.0
Perspire	50	24	48.0
Tegucigalpa	364	117	32.1
Comayagua	237	96	40.5
Saguatopogue	20	6	30.0
San Pedro	515	465	90.3
Pto Cortez	160	118	73.7
Omoa	44	37	84.0
Cuyamel	137	122	89.0
Tela	138	125	90.5
San Juan	72	69	95.8
La Ceiba	407	359	82.2
Trujillo	197	169	85.7
Cristales	88	73	82.9
Roatan	66	42	63.6

The Foundation has done a wonderful work in the Southern States, and is doing the same here thru its efficient medical representatives. I visited the laboratories in the administration building where are chemical and biologic rooms fully equipped. In charge are extremely capable native physicians and assistants, making examinations and applying treatment.

Besides general hygiene, rest, nutritious diet, a course of thymol and chenopodium, precautions are taken against infection.

In the case illustrated herewith, indicating extreme emaciation, with abdominal distention, flabby heart, alternate constipation and diarrhea, and some edema of the feet, Dr. Wilson says recovery will take place. The boy, 8 years of age, was put to bed on a nutritious diet, given 10 drops of chenopodium at 10 days intervals—three treatments. First dose followed by Epsom salts, ending with a tonic of iron, quinine and strychnine elixir.

Every soldier in Tegucigalpa must show a certificate of examination. If he refuses, he loses his pay.

Dr. Brizio, a prominent resident physician, has taken great interest in the Foundation work, as for years he has cooperated in

sanitary matters affecting the city. He is not only a scientific physician with progressive ideas, but a philanthropist who has spent his own money in furthering the health of the country.

The Government, too, tho poor, has aided the Foundation work. It shares a part of the expense of conducting the laboratories, will add another story for extra room needed, and next year will meet all the expenses incurred.

The General Hospital of Tegucigalpa is a very large building, dilapidated, and now undergoing repairs. It is not very well equipped and needs money, altho Dr. Romero, a director, whom I found a most courteous gentleman who speaks good French, has done all he could to make the hospital a modern institution with sanitary wards and properly equipped operating rooms. It will come.

The President of Honduras, Señor Don Rafael López Gutiérrez, with whom I had a pleasant informal interview at the Palace a few days ago, seems to be a most kindly, democratic man, with advanced views regarding the development of his country. He is unusually well informed as to the conditions in Honduras, grants the need of better schools, better roads, better sanitary control, and is desirous of closer and more friendly relations with our own country. He, as well as the Vice-President, Dr. José María Valásquez, who is now practicing medicine in Comayagua, told me that he knew of no cases of leprosy in the Republic of Honduras.

I met a number of physicians in the city, Dr. Pounds, American oculist, Dr. España, orator and politician, Dr. Buchonelli. Also Dr. Smith, ex-Minister of Public Instruction, who is now practicing dentistry.

Drs. Brizio and Romero have had the benefit of European study, but most of the

professional men of Central America, I find, have studied in American colleges and imbibed American ideas if not ideals.

In this country physicians are much respected by the educated classes, as well as by the poorer people. The title "doctor" secures you every consideration among the common people as you travel thru the interior, and many of the state officials and politicians are medical men. It is not so at home, where few doctors are found in high office, the lawyers being politically paramount, Drs. Wood and Work being two notable exceptions.

The Americans I have met here and in the other Central American republics visited, seem to be doing fairly well, but the natives are poor, and outside of the large cities, fees are low and hard to collect. Dr. Robertson of Olancho does not charge for his services, and Dr. Hunter at Puerto Cortez runs a drug store, ice-cream parlor and newsstand in connection with his practice. Drs. McPhail, Carr, Walker and Stowe, are under salary, while Dr. Tenney of Guatemala City has a Government concession to build a hospital, sanitarium and hotel at Lake Amatitlan. Dr. Berg is interested in film production. In Guatemala it is practically impossible to secure a license to practice. Here in Honduras the Government is more liberal. An application in Spanish, approved by the Minister of Foreign Affairs, OK'd by the Minister of Public Instruction, along with a translation of the diploma into Spanish, accompanied in person by the applicant, his diploma, and two residents who know him, will make a member of the medical faculty. The fee is 25 to 100 pesos or \$12.50 to \$50, depending upon whether a lawyer is employed or not. This process, on the whole, is, I think, fairer to the applicant than our own.

I was much impressed by the courtesy of

both natives and the foreign residents.

We spent a most pleasant evening with Dr. Pounds and Dr. España, the former taking us out in his car to hear the radio concert from Havana and several American cities, at the new Tegucigalpa wireless station built and maintained by the United Fruit Company. There are two splendid buildings just outside of the city thoroly equipped with the best radio apparatus. President Gutierrez sent a message to President Harding at the opening, and Dr. Ribas added a friendly message to the American people. Dr. Ribas is a prominent citizen and progressive newspaper man who called on me early and expressed the most friendly sentiments towards our country.

Except a very narrow strip of coast land, both on the Atlantic and Pacific, I found the conditions remarkably healthful thru-out Central America. In two days' trip to the interior towards Clancho department, we passed thru delightful country, high, rolling, covered with oaks and pines. Unlike our own, these piney woods are pasture lands where a nutritious grass affords excellent feed for cattle. Water in the rivers and brooks is always near, while the park-like arrangement of the trees gives animals the needed shade. Here are no mosquitoes or other insect pests. The air is cool and dry, an almost perfect location for a sanitarium. Of this climate Mr. Lever says:

"At an elevation of 2,500 feet, malarial fevers and all sickness common to lowlands and hot climates are unknown. Bronchial and pulmonary diseases never visit such localities."

The question remains—how to get here, over the mountain tops and up out of a hundred valleys and gorges! Under present conditions for most persons, an impossible proposition. When roads are built and ships come with regularity and accommoda-

tions, this will be the world's convalescent ward.

At Siguatepeque, a little town in a little crater bowl surrounding by pine-clad mountains, at an elevation of about 4,000 feet, you have an ideal spot for health as well as outlook. One who did not know by sight, would never dream that such a bit of the Adirondacks, Sierras, or British Columbia could be found here under the delightful climatic conditions of Central America. But so it is.

Siguatepeque, Honduras.

THE TREATMENT OF BLADDER INFECTIONS

BY

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AND

HERBERT SCHOENRICH, M. D.,
Baltimore, Md.

Bladder infections are from hematogenous origin, from direct extension from above or backward from urethral infections, or the result of careless instrumentation on the part of the patient or the doctor.

Vesical lavage seems to be the only way to treat bladder infections and destroy the infecting agent. The solution selected for irrigation should be highly germicidal, at the same time it must be non-toxic and not too irritating. Numerous agents have been used for this class of work, but none seem to have answered the purpose in our hands so well as dibromin, a new organic bromine compound. This agent appears to possess marked germicidal properties and, so far as we have been able to determine, it is non-toxic and does not irritate, to any extent, the bladder mucosa.

We recently used solutions of dibromin in the treatment of twenty cases of bladder

infections and the results are herewith briefly summarized in three selected cases which are fairly representative of the whole series.

Case No. 1.—Complains of frequent and painful micturition with occasionally slight hematuria, particularly noticeable at end of micturition; duration, five days.

Examination: Meatus, no smear obtainable. Urine, both glasses uniformly cloudy, containing quickly precipitating, very numerous fine and coarse granules and muco-pus. Smears from this sediment show very numerous staphylococci in large groups. Prostate normal on palpation, the secretion containing very few poly- and mono-nuclear cells.

Diagnosis: Staphylococcus infection of the bladder.

Treatment: Dibromin, one capsule (six grains) to 500 c. c. tepid water. The bladder filled with this solution which is retained about ten to fifteen minutes. Decided improvement was noticed after the first treatment with an entirely clear urine after the third treatment.

Case No. 2.—This patient presented what we only occasionally find, a gonorrhreal cystitis without any involvement of the prostate or seminal vesicles. There was also very little urethral discharge, the urine in all glasses uniformly cloudy. Smear made from the sediment was thick andropy, showing numerous gonococci.

All treatments consisted of a daily preliminary irrigation with sterile water, then the bladder filled with the Dibromin solution, six grains to 500 c. c., and retained for fifteen minutes. After the first treatment the urine changed from cloudy to clear and altho there were several relapses, in ten days the urine was clear and remained so permanently.

Case No. 3.—Patient presented a typical acute colon cystitis produced by an attempt to "wash his penis and urethra" by the use of an irrigating bag nozzle just after having given himself a rectal enema.

He presented the usual symptoms of an acute cystitis, namely, frequent micturition followed with slight bleeding and vesical tenesmus; a more or less constant uncomfortable tickling sensation in the region of the neck of the bladder. On examination, the meatus was dry. The prostate was slightly congested and soft to touch but not much enlarged. The prostatic secretion contained pus and blood-cells. Urine—both glasses cloudy with numerous large and small shreds. Microscopic examination of both shreds and urinary sediment showed numerous clusters of colon bacilli, pus-cells, blood-cells and débris.

The treatment consisted in gently massaging the prostate once daily, followed by dibromin solution in the method described above. This was administered for one week, then every other day for another week, at which time the patient was completely cured. The urine showed improvement after the first irrigation of Dibromin, while the prostatic condition responded more slowly.

While the results in these cited cases may seem somewhat unusual, one may bear in mind that these were selected cases where the new antiseptic could be given a fair trial where the source and site of the infection could be reached. Obviously one cannot expect such brilliant results where the infection is higher up, *viz.*, pyelitis, etc., or where it is deeper seated—vesiculitis, prostatitis.

Referring again to the cited cases, while the same results no doubt could have been obtained by the use of bichloride of mercury in the staphylococcal and colon bacilli infections, and permanganate of potash or the silver salts in the gonococcal infections, this could have been accomplished only at the expense of considerable irritation, if not transient damage to the vesical mucous membrane.

The advantages of dibromin are:

(a) Easily prepared and an odorless, colorless and non-staining solution.

(b) The absence of irritation to the urethral and vesical mucous membrane even after ten to fifteen minutes' retention of the solution of six grains to 500 c. c.

It would be interesting to learn if the potency of the solution is lessened on standing, also whether further investigation proves its value in the treatment of acute anterior gonorrhreal urethritis.

1134 Linden Avenue.

An Aortic Murmur.—Lindsay (*British Medical Journal*, May 13, 1922) recalls that: 1. An aortic systolic bruit is often heard over the aortic cartilage in the absence of any diseased condition. 2. That many such bruits are due to the position of the arms at the time of examination, or rather to the contraction of the muscles of the shoulder girdle. 3. That such bruits mostly disappear with the patient stripped to the waist and the arms hanging loosely at the side.

HAVE WE THE MORAL RIGHT TO ENFORCE SPINSTERHOOD?

BY

EDWIN F. BOWERS, M. D.,
New York City.

In his 4,000 century struggle up from practical apehood to a condition in which he can at least stand on his hind legs and look at the stars, man has played himself many scurvy tricks.

Perhaps the scurviest of these, and the one that proclaims most trumpet-tongued his remarkable resemblance to a locoed jackass, is his propensity for getting himself killed in the insanity called "war."

From every conceivable standpoint this quaint trait may rightly be considered the quintessence of all the asininites, the *ne plus ultra* of everything that is destructive, degrading, demoralizing and dehumanizing.

Hardly an intelligent person anywhere but recognizes the irremediable evil wrought by war, and by the wholesale butchery of the flower of the young manhood of the world.

Of course, much has been done within the past year to neutralize the poisons left behind from this last orgie. It is highly encouraging to note that some of the best constructive thought of the world is now actively engaged in trying to patch up the damage wrought during the blood-drabbled years just past.

Reconstruction is well under way, and marvels of repair have been accomplished. Commerce, except with Russia—which needs it most of all—is being once more slowly re-established. Hysteria is being laughed at, instead of sympathized with.

And while there isn't much cause for cheering, as yet, particularly with the economic conditions as they are, improvement, nevertheless, is manifest.

Problems in Which no Progress Has Been Made.—In Europe, however, there still exist problems towards the solution of which little or no progress has yet been made.

Perhaps the chief among these relates to the status of unmarried woman in the various European countries affected by the war.

In order to better comprehend this question it may be remembered that before the war, the ratio between the sexes in most of the European countries was about equal. In other words, there was potentially a mate for every woman of marriageable age in Europe.

I say "potentially," not "actually." For the long list of gun-shy bachelors, who, because of economic, or physical, or other reasons, might remain bachelors even after a Venus and Adonis solicitation, subtracted quite a percentage from the number of husbands available.

This was bad enough—for it meant that ironic Fate had decreed that, among the women of Europe, thousands upon thousands were doomed to go thru life deprived of legitimate sex relations, and denied the natural joy of motherhood—as sanctioned by Society and by the Church.

This was undoubtedly a deplorable condition. But sometimes—as our Irish friends might say—things are never so bad but that they could be worse. This proved true concerning the inequality in the sex ratio in Europe.

For after the Red Sword of War was finally sheathed, and after the gruesome tally was made, it was found that 7,668,320 men had been killed in this bloodfest; 18,681,251 had been wounded; and 7,080,580 reported as prisoners or among the missing.

Out of the seven and three-quarter millions of dead men, there could most emphat-

ically be no hope of ever securing a husband, or a father for prospective children. This simple fact, by the way, is entirely ignored by the cracked-brained fanatics who contend that killing and being killed in war develops a stronger, a healthier and a more virile race.

Also, among the eighteen and three-quarter million wounded, there must be numbered thousands upon thousands of blind, or cruelly maimed, or crippled and twisted—of those incapacitated in ways which must disqualify them from ever becoming husbands or fathers.

Many of the Wounded Totally Incapacitated for Marriage.—Only one who has had the opportunity to visit the great hospital established in this country for the treatment of these battle-beaten wrecks of men can realize what the total incapacity among the millions of European wounded must amount to.

Of the prisoners and missing, no doubt the greater majority have long since been happily returned to their homes.

However, a missing man may well be a dead man, holding a feast—not where he eats, but where he is eaten—in some black swamp, or in the ooze at the bottom of a river.

So, we now have some *general* idea of the manhood power that has been snuffed out in Europe. We can estimate, in a rough way, the total of men who must be no longer available as husbands or fathers.

This total would probably run close to twelve million men—young men, and men in the full flush of vigorous manhood.

The Chancellors of Europe, and many European statesmen have cast shrewd eyes upon these alarming figures, translating them in their own minds into a next generation deficit of little Germans, Frenchmen, or Englishmen—or the particular national

unit in which they might happen to be most paternally interested.

Of course, they ignore the fact that the chief reason why so many among the inhabitants of all the fighting nations—and many innocent bystanders as well—were killed off in this last war was because there happened to be too many Germans for Germany to support, and that consequently a "place in the sun" had to be found for these Germans.

In other words, new markets had to be found for exploitation; and new territory had to be acquired in which little Germans could grow into big Germans.

Over-production of Human Beings the Primary Cause of War.—So, over-population, and the inevitable friction arising from expansive attempts, brought about the war.

And the nearest the thick-witted Chancellors and statesmen can now come to preventing another war is to strive, with might and main, to bring about the same condition of over-population which caused the last one!

So that the declining birth rate, and the surplusage of spinsters is a cause of serious solicitude among our European brethren.

The Germans, with their curious one-idea'd vision, saw the inevitable birth rate decline early in the war, and took their practical, materialistic way of overcoming it.

They tore a leaf out of the book of the old Lacedemonians, who had sworn a sturdy oath to Zeus, or Neptune, or some of their other gods, not to return to Sparta until they had licked the eternal stuffing out of the Messinines.

This job, it seems, took longer than the Lacedemonians had anticipated. For at the end of 10 years their troops were still at war in Messina.

Then the edict of the women went forth. Word was sent to the troops enjoying the

war to come home and beget children with their wives and to give the daughters who had meanwhile grown up an opportunity to achieve motherhood.

The Lacedemonians couldn't very well call their war off and come home, however, so they sent a picked number of robust warriors to impregnate all the women at home.

Inasmuch as many of these young women were virgins, all the children born of the visit of this delegation were called *Parthenios*, or "virgin children."

In later days the Greeks frequently invited especially talented or beautiful young men to visit at their homes, so that their wives and daughters could later bear beautiful children. This was accounted eminently proper, and did not, in the slightest degree, injure the reputation of the women.

How the Germans Followed the Example of the Old Greeks.—And so, Germany, to stem the tide of her falling birth rate, emulated the Lacedemonians and the old Greeks, and sent her picked men home from the Front, with the injunction, "Breed before ye die." And German women, by the thousands, became as brood mares—for the glory and the perpetuation of the Fatherland and its institutions.

Somewhere Hamlet says, "There is no good nor bad, but thinking makes it so."

In France, England and other countries, the bars of convention were also let down. There was a condoning, if not an actual encouraging, of relationship with the young men herded together for the shambles of the firing line.

The morality of Europe was demoralized. The ethical concepts of centuries of development were cast into the discard—ignored as tho they never had existed.

A plague of venereal infection ravaged Europe, until the Army heads, shocked into

a realization of the gravity of the situation, initiated a departure from smug and hypocritical inaction, and forced venereal prophylaxis upon the troops—which measure effectually prevented the further spread of the plague.

However, thousands upon thousands of illegitimate children were brought into being, as a result of the relations established between the soldiers and the young women with whom they were thrown into contact.

Certain among the European countries have already legitimatized and accorded a status to these war-born children.

So the old morality and the old systems of ethics, built up after laborious centuries of travail, have been thrown into the dustbin.

And now comes serious and subtle propaganda, instituted in favor of the recognition of polygamy, concubinage, morganatic marriage, or some other form of extra-marital relationship.

Scientists and Sociologists Advocate Extra-Marital Relations.—The physiologic injustice of keeping twelve million women from ever knowing the joys of marital love, or of gratifying the instinct—next to self-preservation, the strongest in all nature—is admitted—and by eminent scientific men.

It is contended that polygamy is the present practice among two-thirds of all the inhabitants of the earth, where it is a legally recognized form of sexual relationship. Also, that polygamy, in some form, is practiced by all the nations of the globe; and that a strictly monogamic people does not exist.

These cold-blooded and unsentimental scientists further urge that strict monogamy in the individual man—even among the most highly civilized races—is almost as rare as is strict celibacy.

Havelock Ellis, William J. Robinson,

Sigmund Freud, and practically every authority on the subject would agree that this is a true statement of facts as they exist.

In this connection, it is interesting to recall that monogamy is of comparatively recent origin, as polygamy was not forbidden by law until the early days of Rome, when women were so scarce that men had to steal them from their neighbors.

It was really not until this time, so the sociologists inform us, that it was considered unfair or unlawful for one man to appropriate several women for himself, while other men might not be able to obtain even one.

However, up to the days of Martin Luther, some form of polygamy was quite generally practiced in most European countries.

The argument is also advanced that monogamic laws were kept in force by states which, for quite as definite reasons, should not allow polygamy, in the interests of women who cannot otherwise be provided with husbands.

Abstinence and the Nervous System.—But perhaps the most forcible of all reasons given—at least from the standpoint of the physician interested in nervous diseases—is that Nature has no respect for the man-made laws of ethics or morality.

And that medical science—dating especially from Professor Sigmund Freud and his disciples—has proved conclusively that to the repression of the normal sexual instinct, is directly traceable practically all cases of hysteria, and a good proportion of nervous, mental, and physical disorders that afflict womankind.

These are the cases to which Professor Freud refers as “cripples of sexuality.” Of course, all women are not affected, in any appreciable way, by abstinence. Yet,

the injustice of condemning what may be really a large proportion of twelve million unmarried women to a life, either of semi-invalidism, or of secret promiscuous relations, must be a matter of solicitude to everyone.

It cannot be denied that psychoanalysis seems to demonstrate a considerable amount of truth in these observations, and that, as medical men, dealing with nervous conditions, we are concerned with accomplished facts, and not with moral or ethical concepts, which change very largely with environment, and with social and politico-economic conditions.

Also, it cannot be denied that the present style of dress, or rather undress among women, has a basis of sexual attraction—founded, consciously or unconsciously, upon the desire of women, in the competition—perhaps never before so keen in the history of the race—of securing a mate.

It is for these reasons that the scientists suggest that it may become actually necessary for some countries to legalize some form of concubinage, or polygamy, in order first, to recoup their population, and next, to prevent the possibility of developing millions of neurotics, to fill asylums and sanitariums, and to burden an already overburdened state with the expense of their care.

It is significant that one of the first countries to legalize concubinage is Sweden, which, while it took no immediate part in the war, nevertheless has a disproportionate excess of females among her population.

In Sweden, concubinage is socially recognized. It may be officially registered and is based upon a legal contract, signed by both parties to the contract, in the presence of a public official.

While the idea is abhorrent to right-think-

ing individuals in occidental countries, it cannot be waived aside as the silly vaporings of light-minded men, or of women deficient in the modesty and delicacy that are a part of the warp and woof of civilized women.

The Inherent Right of Women.—If the white race is to replenish its horrible wastage, or if the women of Europe are to be accorded the right to the exercise of functions implanted in them by a fecund Nature, may it not be that some modification of the present monogamic relationship must be established?

This is a problem that will require wise and sympathetic handling, and the council of men and women of broad catholic minds.

Of all the after-the-war problems it is the one which may require profound consideration. For it reaches down to the very roots of the most fundamental of all our institutions—the home, the sanctity of the marriage relation, and the legitimacy of the children.

It may be very difficult to dodge this issue. The simple declaration that it does not exist may not be a sufficiently cogent argument for these twelve million European women upon whom spinsterhood has been ruthlessly thrust.

Is there any rational way of helping them to solve their problem; of enabling them to expand in mind, body and soul—to fulfil the great destiny for which Nature created them?

Is there any rational way of helping them to solve their problem? This is the most far-reaching question which the aftermath of the great war propounds. For upon the manner of its answer depends not only the status of a new generation, but also the health, happiness and, in certain instances, even the sanity itself of twelve million innocent fellow humans of this generation.

THE AVOIDANCE OF OPERATION BY MASSAGE AT PETER BENT BRIGHAM HOSPITAL.¹

BY

DOUGLAS GRAHAM, M. D.,
Boston, Mass.

On August 5, 1921, Prof. D. E. W. came to me complaining of pain and stiffness in the right side in the lumbo-abdominal region of moderate severity with frequent exacerbations. He had recently been X-rayed at the Peter Bent Brigham Hospital and advised to have his right kidney removed.

Anamnesis.—Four years prior to this he had stood on the sidewalk in a cold wind, waiting for a street car, after vigorous exercise which had put him into violent perspiration. For two days after this he had cramps in the right side of lumbo-abdominal region with constant vomiting of a yellowish substance. Then he had a long respite. Just before he came to me these attacks, however, had returned, lasting from half an hour to several hours with cramps and vomiting. On palpation there was slight stiffness of the lumbo-abdominal muscles and moderate limit of trunk rotation. Under massage and circumductory movements, both passive and active, with home exercises and warm baths, these symptoms entirely disappeared in a couple of weeks. Later, to tone up his muscles still more, I superadded the faradic current for a few minutes after each massage and he left my office rejoicing after each visit.

For internal treatment, I prescribed hexamethylamine and lithia and other alkaline waters. Occasional examination of his urine by his physician confirmed the improvement. After half a dozen visits he was X-rayed again at the Peter Bent Brigham Hospital, and it was reported the shadow had completely turned around. After half a dozen more treatments, nothing in the abdomen could be seen as he was well in every way. He did not lose a day from his profession, that of teaching mathe-

matics, from the time he came under my care.

That the subjective symptoms of discomfort and uneasiness should have entirely disappeared before the objective ones of stiffness in motion and shadows seen by the X-ray are facts of great interest in this case.

THE INDEPENDENCE OF AMERICAN MEDICAL JOURNALISM.¹

BY

N. E. ARONSTAM, M. D.,
Detroit, Mich.

The independence of American medical journalism is seriously menaced today by a formidable foe insidiously entering its ranks; gradually but effectively it is being jeopardized by the advent of authority and unwarranted rigidness on part of those powers that have usurped unto themselves the prerogatives of the so-called "arbiters elegantianum." Censorship has taken the place of free expression, and, where formerly ideas and opinions were allowed to become current, today they must bear the legend, "Allowed by the censor," before being admitted to publicity.

This evil—grotesque as it may seem—could perhaps be borne and condoned; yet honest censorship today does not stand alone; continually hampered and thwarted by clique and coterie, its existence as a justifiable institution is open to question. It must be borne in mind that censorship conducted by censors bears a human element, and hence the admixture of favoritism and partisanship is occasionally discernible—factors that assuredly are not conducive toward elevating the morale and independence of journalism.

¹ Read before the American Medical Editors' Association, Cleveland, Ohio, October 17, 1922.

¹ In the last edition of my book on Massage (Published by J. B. Lippincott Co., Philadelphia and London) I have reported numerous instances of operations avoided by this treatment.

Heretofore, original contributions were entirely at the risk and responsibility of the author. Editorial comment, if at all ventured, was solely reserved for a résumé or impartial summary of the same. It never arrogated unto itself the right of conclusive decision or absolutism. It merely spoke tentatively and in a tone that neither belittled nor aggrandized. The province of the editor was not to reject contributions on account of certain inherent ideas or theories that were diametrically opposed to accepted standards of medical science or in contradiction to constituted authority. Essays were regarded as not available only when gross errors in diction or faulty literary construction marred them to a point so as to render them unfit for publication. Never was there editorially a question raised as to methods and procedures, as to principles and conjectures. Criticism and polemics were invited from without. Inviolate stood the sacredness of the press and freedom of thought was always respected and never for a moment attacked by the editor. "Freedom of thought and latitude of expression" were the acknowledged principles of journalistic ethics. The author had *carte blanche* and was the sole sponsor of his theories and speculations. And thus the democracy of thought in the vast republic of journalism was given an impetus to develop along the lines of evolution.

The order of things is changed now. Journalistic standards are being continually prescribed, and deviations from the stereotyped path proscribed by constituted authority. Certain formulæ are set before the author, which he must never ignore or transgress on peril of his disfranchisement. To question the *raison d'être* of such self-constituted power is a matter that does not enter the scope of this paper, and is a subject for

an academic discussion of somewhat greater length.

Let us now examine into the principles and standards that a certain school—or shall we say caste of journalists—has promulgated as the categoric imperatives for scientific journalism, as sort of trilogy to all those who aspire in the realms of medical literature.

- 1—Never write unless you are adequately supported by laboratory findings, experiments and clinical evidence.
- 2—Have an unlimited bibliography at your disposal.
- 3—Never venture an individual opinion. It is unscientific.

This medical trilogy is to that school an unassailable truth. To break these commandments constitutes sacrilege in the domain of medical journalism and stamps the author as unprogressive and unscientific. Woe to him who plays the rôle of iconoclast, his painful and laborious work may be relegated to oblivion—which is the waste-basket—the grave of so many hopes and aspirations. It therefore resolves itself that there are only a few favored Olympians who can successfully comply with these requirements. For such a task they must have at their command a pretentious library, a research laboratory and large hospital facilities, requirements that only a few happy mortals or demigods possess. It might be asked how many of the large number of contributors could boast of having rigidly conformed to these requirements? How many of the contributors to the independent medical press of America have within their reach such ample material and facilities? "Very few" must necessarily be the reply. And yet should these same authors desire to have their papers published in certain tone-giving journals that stress

and demand the aforementioned conditions, they would be summarily excluded and their manuscripts unconditionally rejected.

It must be admitted that the axioms set forth for the creation of scientific literature are essential and ideal and should be adhered to whenever possible. Like in the world of ideals they should be guiding lights in the perfection of every scientific undertaking. Without them the advance of medicine could not be thought of. But like all other principles and dicta—even ethical and moral dicta—they are subject to change and modification. Certain exigencies tend to alter and control the full realization of these principles. The average author tho fully cognizant of their importance, regards them flexible enough to admit of adaptation, and in harmony with these principles he proceeds to adjust them to certain problems that fall within his field of observation. In other words, while keeping these ideals constantly before him he endeavors to soften their rigid and severe outlines, thus allowing the plastic to make up any deficiencies in the formal. He blends the categoric with the creative; he instills life and interest in an otherwise dry and technical subject and permits a human element to unfold itself and permeate the interstices of dogmas and dictates.

In presenting medical articles it not infrequently happens that a single case minutely observed and properly studied and correlated, wherein clinical symptoms are methodically grouped, tabulated and interpreted and where an independent and human equation is injected, is worth more than a large number or series of cases with exhaustive and painstaking statistical data, wherefrom conclusions are derived in accordance with the "rule of the thumb," but lacking the deep philosophic insight, that readily charac-

terizes the former. Was Jenner's epoch-making discovery the result of experiments conducted with the same nicety and precision as we do them today in a well-equipped laboratory? Has Harvey established his principle of the circulation of the blood by intricate electrocardiographic devices? Has Ehrlich given to the scientific world his side chain theory, largely based upon numerous animal experimentation and laboratory findings? Has Morton, the father of anesthesia, gathered his valuable information and published it as a result of laboratory experiments? It was the product of his personal observations and experience. The same may be said of Marion Sims, Ephraim McDowell, Major Ross and others. Are numbers always necessary to prove certain truths and must these truths be garbed by check and counter control? Must medical journalism rigidly insist upon the above-mentioned dogmas and prevent independent investigators from setting forth hypotheses personally acquired by logical deductions? Do morbid processes solely depend upon gross or minute pathologic lesions or are there subtler factors extant which provoke them, that are designated as functional departures not demonstrable by laboratory findings?

These and other questions must be considered by the journalist and by those who wield the editorial trident. Is journalism to prescribe strict rules and regulations for the author and force arbitrary laws upon him, causing him to sacrifice his independence and thus become a harlequin and masquerader in his noble and scientific calling? Is collectivism to efface individual effort, and should the latter docilely resign itself to the inevitable without remonstrance and struggle? Should we suffer autocracy, literary and medical, to usurp the sole right of deci-

sion as court of final instance and either stamp an otherwise mediocre production as splendid or mar a merited contribution by a single fiat of *Verboten*, because certain self-constituted powers regard it as such? What will become of the independent medical press if it allows unheeded such pernicious influences to continue? An attempt has been made by a few editors to decry such an attitude, but like a voice in the wilderness, it engendered but little response from their colleagues and silent scorn from their antagonists.

To remedy the existing evil, it requires the concerted efforts of the entire medical press. Its function is to set a check to unparalleled collectivism and stimulate individual endeavor by encouraging the independent investigators to continue in their work and to publish their findings. Not favoritism, prestige or standing should determine the editor's decision, but merit, pure merit and quality. Shortcomings should be charitably overlooked and condoned, tactfully pointed out, but never summarily condemned. Let us strive to keep journalism free from the fetters of politics and arbitrariness and make it independent and constructive, a stimulus to the individual author and a source of valuable information of incalculable benefit to the reader.

Local and Spinal Anesthesia in Children.—Rocher (*Archives de Medecine des Enfants*, December, 1922) uses a solution of 1:300 of cocaine in Hayem's fluid with addition of epinephrin for local and regional anesthesia, and procain for spinal anesthesia. Cocaine is well tolerated by children, and it can and should be employed for local and regional anesthesia. Spinal anesthesia with procain has been used by Rocher in 125 children from 4 to 15 years old without any accident.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

V.

"Dathwa is worse, Miss Sahib. He can not work today." Salaaming apologetically, Dathwa's fellow-servant withdrew.

When Dr. White could leave, she went to look after Dathwa, who had come to her the previous day for headache medicine.



(Photo by G. C. Davis.)

KASHI AND HIS WIFE.

The servants' quarters lay along the west wall of the compound—a row of rather substantial one-room huts with the usual mud floors and walls.

A mild excitement seasoned the air. In the doorway of Dathwa's hut a dozen women and children were crowding for a glimpse of the interior. At sight of the doctor, they melted away.

Sitting cross-legged on his corded bedstead, Dathwa had his head bent low over an earthern jar, from which smoke was issuing. The performance was being super-

intended by his mother and a neighbor woman.

Confusion covered the trio as Dr. White stepped inside. Dathwa sputteringly apologized, while his mother pulled a cloth over the jar, to preserve the smoke.

"I want to get well quick, Miss Sahib," stammered Dathwa. "It's *Holi* week, you know, and I can't miss the celebrations."

His mother, the wrinkled ruler of his house, took up the explanation. "He has been very bad, *hazur*. Always he is moaning with the pain. His paternal uncle's wife's mother told us about the smoke of chillies. It drives out the evil spirit."

"Do you believe those chillies will help

the two-weeks' baby there were five children. The little girl who squatted on the ground scouring the brass cooking vessels with cow manure, Dr. White did not recognize as Dathwa's.

"And who is that?" she asked.

"Oh, that is Kashi's wife."

"Kashi! Why, he is only a little boy."

"Yes, *hazur*, but he is the oldest. They have been married a long time. Tara is only nine, and I did not intend to have her come to live with us for two or three years yet. But I want to train her right, so we sent for her."

Dr. White returned to the patient. "Now remember," she ordered as she was leaving,



(Courtesy of Presbyterian Board.)

SAVING A LIFE.

him more than my medicine?"

"Well, your medicine is good, *hazur*, but it takes so long. We just thought we would try this. He does not want to miss the *Holi* fun." She beckoned Dr. White outside, and pointed to the house wall, which was adorned by the impression of a large hand, in red. "See, I have put up the protecting hand, for this morning early a vulture sat on the roof of our house. Oh, *hazur*, I can't let him die. He earns the rice for all of us."

The doctor looked around. It was a sizable family. Kashi, aged ten, sat puffing at his father's *hookah*. Between him and

"you are to lie quiet until I give you permission to get up. It might develop into smallpox. For no reason whatever are you to go outside the compound."

"It is *Holi* time, Miss Sahib," he pleaded.

"The more reason for staying in. Your head could not endure all that racket."

Dathwa closed his eyes in silence. His mother's feelings were screened behind a stolid immobility.

* * * * *

Easter came early that year. And thus Holy week coincided with that revolting

March festival of the Hindus, known as *Holi*.

A veteran of twenty years as doctor and surgeon in India, Dr. White had laid her plans long ahead so that neither she nor her assistants would go out of the hospital compound during that mad festival. Several operations were waiting, and the whole institution was to receive a going over. So the little community worked, shut away from the throbbing, pulsing life of the city, which flowed past the gate thru the scorching dust of the street.

Crowds of gaily dressed merrymakers threw red liquid on all passersby, sang obscene songs, and flung indecent remarks at women. Everyone who came into the compound bore a sprinkling of red on his garments. Laughter and jesting prevailed.

The nights were punctuated by religious processions and bonfires. Several women and children came to the dispensary to be treated for bruises, received in the careless crowd. Quietly the staff ministered to their needs, while the carousing mob, pleasure-mad, made the streets unfit for women. "*Holi, Holi*," ran the refrain of their songs.

On the last night of the festival, the night of the full moon, the orgy continued until daybreak. The singing of *Holi* songs, the throwing of red liquid, the unbridled pursuit of pleasure, reached their culmination. The warm breeze bore to every room of the hospital bungalow the weird tones of the songs and occasionally the sharp scream of a woman.

At five A. M. the patriarchal night watchman coughed at Dr. White's door. "A patient, Miss Sahib," he announced.

The doctor's eyes opened wearily. She was soon outside.

There lay a little girl with frowzy hair full of dust, wearing anklets, bracelets, and necklet of silver-washed iron, and a new green calico skirt, muddied by the mixture of red liquid and road dust. Kashi's mother and grandmother stood by. Dathwa leaned limply against a post.

"What happened?" asked the doctor.

"She got in the way, *hazur*," replied the old woman. "She was trampled on."

"She is too little to be out on such a night."

"She is married, *hazur*. It is Tara."

"And you," said Dr. White, addressing Dathwa, "what were you doing?"

"I just went out to see the fun," he responded weakly. "Mother thought it would be all right."

A swift examination of the child showed a broken arm, a long gash on the chin, two or three broken ribs, and abdominal injuries.

The operating room was quickly made ready, and with her two Indian assistants and several nurses, Dr. White set to work. Twice she almost decided it was useless to continue, but every girl in the circle about her was radiating confidence and expectancy. She could not give up.

For three days Tara lay on the little white bed with closed eyes. Her tongue was often busy. "Let me go home," she would plead. Then a cry of terror, "Don't step on Tara!"

Her young husband's family would have visited her frequently had not a special nurse kept them off the verandah. They brought rice and curry and greens for her to eat. And from her own village came her youthful father with a vial of "very strong medicine," which he begged the nurse to give her.

"We always use it," he explained. "It is the only medicine Tara has ever taken. See?" as he uncorked the bottle. "It is urine from a new milch cow, mixed with milk and *nim* juice."

The old grandmother-in-law was fatalistic. "Has she died yet?" she inquired of Dr. White.

"Oh no, I don't believe she is going to die."

"Yes, she will too. The vulture sat on our house. Better she than one of our own."

On Easter morning at daybreak, as the girls from the orphanage were singing their carols, Tara opened her eyes. "*Holi*," she repeated softly. Then seeing the nurse, she said, "That is a different kind of a *Holi* song."

When Dathwa reported for duty, he inquired after his daughter-in-law.

"She is better?" he asked.

"Yes," replied Dr. White.

"You can cure her, Miss Sahib," he assured her with simple faith. "You cured me, and Tara is not sick at all, only trampled."

RATIONAL ORGANOThERAPY

Syphilis of the Endocrine Glands.—A considerable number of cases of luetic involvement of the endocrine glands have been reported. Unfortunately in most of these cases, as Hazen points out in *The American Journal of Syphilis* (January, 1923), we have only pathologic findings and no clinical history, due to the fact that the lesions were discovered at autopsy. For a general discussion of the subject the reader is referred to the chapter on acquired syphilis of these glands.

The Thyroid.—It is usually stated that congenital syphilis of the thyroid gland is rare, but this may be because it is not looked for. Demme states that he has seen children with gummosus nodules, and Gombault, Garnier and Clark have reported cases. In Clark's patient there were marked symptoms of hypersecretion, no exophthalmos, pulse rate two hundred, palpitation and extreme nervousness. Under specific medication recovery occurred.

The Parathyroids.—No literature upon this subject can be found.

The Thymus.—Adami states that both gummosus and diffuse fibroid changes may be found, and Hochsinger believes that there may be a very marked enlargement which subsides under therapy. Possibly the Dubois abscess has aroused more interest than any other lesion. Chiari holds that this is a cavity lined by epithelium, and derived from accumulation of the cells within a Hassal's corpuscle, but Simmonds and Schlesinger think that the cyst formation is due to arrest of development of some of the epithelial tubules that give rise to the thymus. Warthin has suggested that in some cases it is due to the post-mortem softening of the gland. Weisel has given a complete bibliography of the subject and Oliver has written a good article.

Pancreas.—Syphilis of the pancreas has already been discussed.

Testes and Ovaries.—Lesions of these organs have been discussed elsewhere.

Suprarenals.—Syphilitic lesions of the suprarenals have been found at autopsy, but the symptomatology is practically unknown. Cases have been reported by Esser, Kokubo, Vmogradoff, Simmonds and others. In a late paper Simmonds states that the most frequent pathologic change is the so-called perihypernephritis syphilitica, the process being in the capsule and associated with atrophy of the cortex. In addition, gummosa and necrotic areas frequently occur in medulla.

Pituitary.—Lancereaux states that the pituitary may be enlarged and indurated in congenital syphilis. Simmonds was able to collect ten cases from the literature, those of Simmonds, Schmidt, Chiari, Triboulet, Dalpy and Hardwick. Also it is probable that syphilitic disease of the pituitary can, either directly or thru internal hydrocephalus, cause the adipose genital dystrophy of Bartels.

In addition it is certain that various glands may be diseased at the same time, so that various symptom-complexes result. Reede tells me that he has seen a number of such cases in congenital syphilites which he is as yet unable to classify satisfactorily. Vagli has also called attention to this fact.

Thyroid Instability.—Korndoerfer (*The Hahnemannian Monthly*, March, 1923) states that this is a pure unendocrine dyscrinism. This thyroid dysequilibrium was first called to our attention by Leopold Levi, and in conjunction with Rothschild has been closely and carefully studied. Clinically, it presents a distinct and unique picture of

thyroid dysfunction. It is characterized by the appearance, at the same time, of both symptoms of hypothyroidia and hyperthyroidia. The proportion of the symptoms of the two conditions varies in different cases. Sometimes we have a preponderance of the symptoms of the one, and then again we may have the other dominant. In the greater number of cases the hypothyroidia is most in evidence, but the converse may be so. We discover symptoms of the hypo group, such as low temperature, constipation and alopecia appearing at the same time that we elicit a history of insomnia, palpitation and transient febrile attacks. These cases do occur frequently in the average practice, and if all the symptoms are summed up they closely resemble an incipient T. B. C. and cause, at times, a great deal of anxiety.

Clinicians often fail in the proper orientation of these cases and make for themselves a difficult problem, whereas the case might be very simply solved and even as simply rectified. The frequency with which these cases are encountered removes the purely theoretical interest and places the whole subject of *thyroid instability* on a thoroly practical basis.

The diagnosis presents absolutely no difficulty. Exact and careful *case taking* will always disclose such cases of instability. A tabulation of the symptoms of hypo- and hyperthyroidia opposed to each other may be found of service and Levi himself has suggested the following:

HYPOTHYROIDISM	HYPERTHYROIDISM
Dull expression.	Exophthalmos, brilliant eye.
Thyroid same in size.	Thyroid hypertrophied.
Falling of hair.	Hypertrichosis, often of the eyebrows.
Eyebrow sign.	Loss of weight.
Tendency to obesity.	Hyperdermia.
Hypodermia.	Tachycardia.
Dry skin, tendency to edema.	Moist skin, excessive secretion of sweat.
Sleepiness, apathy.	Insomnia, nervousness, irritability.
Anorexia, constipation.	Tendency to diarrhea.

Dyscrinia and Sterility.—The glands which interest us most in relation to sterility,

according to Snyman (*Med. Jour. of South Africa*, December, 1922), are the catabolic group, namely, the thyroid, the pituitary and the adrenals.

Thyroid secretion is essential in its relation to other secretions in providing sexual development. The gland is very active at puberty and begins to regress at the climacteric period. There is a close relation between the thyroid, ovaries and uterus; hence the enlargement of the thyroid in the first weeks of married life and the goiter of adolescence and pregnancy; hence, too little thyroid causes sexual infantilism with its amenorrhea, dysmenorrhea and delayed somatic and psychic development. The flooding of the organism with thyroid substances exercises an elective stimulating effect on the thymus, pituitary, suprarenals and ovaries, and when increased beyond the limits of safety we get the clinical picture of goiter; and in lesser degrees of hyperthyroidism, the symptoms are the reverse of those of hypothyroidism, the patient manifesting alertness, the skin is moist, no obesity is manifest, all being phenomena of increased metabolism. The pituitary consists of an anterior lobe which is concerned with body growth, including the development and function of the genitalia, and a posterior lobe, anomalies of which *in the younger years* cause a failure of development of the ovaries and of the other structures characteristic of the female (*dystrophia adiposo genitalia*); *after adolescence* anomalies of the hypophysis result in the atrophy of the genitalia (*degeneratio adiposo genitalia*). Bandler says: "There is no question in my mind that the posterior lobe and the ovaries have trophic control over the uterus and the adnexa." We know the action of pituitrin, and in all probability many cases of excessive pain and uterine contraction during menstruation resulting in dysmenorrhea are due to excessive activity of the posterior lobe at these menstrual epochs. Bandler has a strong suspicion that the anterior and posterior lobes are antagonistic as regards their action on the female genitalia, hence in cases of diminished menstruation he combines extract of anterior lobe with extract of posterior lobe and ovarian extract. The adrenals are made up of cortex and medulla, and disturbances of the former affect the reproductive system, tumors, which generally affect girls, causing prema-

ture sexual development. The suprarenals and the pituitary are closely related, and we know that an injection of adrenalin (the secretion of the medullary part) markedly increases the action of pituitrin.

The ovaries are essential for the natural development of the sexual organs, as proved by the experiment of Knauer quoted by Bandler, and this occurs thru the absorption into the circulation thru the lymph channels of the ovarian secretion, probably of two varieties, that of the interstitial part being held to be responsible for the secondary sex characters in the female and for menstruation. While all elements of the ovary promote hyperemia of the uterus and of the external genitalia, the hormone of the interstitial part alluded to prevents or diminishes uterine contractions, while the hormone of the liquor folliculi, follicle lining, and corpus luteum excites uterine contraction or renders it sensitive to contractile stimuli. Early ripening of the ovary often has an effect on skeletal development resulting in slighter stature, thus we are justified in concluding that the ovary has an inhibitory action on the hypophysis, and this inhibitory action is further proved by the increase in weight of the hypophysis during pregnancy when the ovarian gland activity ceases. The ovary produces another element, the corpus luteum, which develops especially during pregnancy, and which produces a secretion designed to stimulate the thyroid and inhibit the posterior pituitary tendency to bring about menstruation. It also inhibits ovulation.

Two other glands are of interest, namely, the placenta, which inhibits the menstrual function of the ovary, and the pituitary, as is also done by a hormone elaborated by the mammary gland under the stimulus of nursing and, therefore, extracts of these glands are considered excellent remedies in menorrhagia and metrorrhagia. Having shortly reviewed the physiology of the endocrine glands and their hormones as related to the genitalia, we can now proceed to consider the symptoms attributed to the particular gland in question, but the interdependence of the endocrine glands renders it very difficult to determine which particular gland is at fault.

Respiratory Gas Interchanges with Goiter in Children.—De Quervain

(*Schweizerische medizinische Wochenschrift*, August 24, 1921) emphasizes the importance of the respiratory basal metabolism for estimation of goiter and the effects of treatment. H'Doubler analyzes four cases from this point of view, and also three other cases in which the gas interchange control was recorded before and after thyroid grafting in cretins. Extensive resection of the vascular goiter of the pre-puberty stage reduced the basal metabolism by an average of 17 per cent. Resection of the goiter in one of the cretins did not reduce the basal metabolism, thus confirming the functional inferiority of the cretin thyroid. The respiratory basal metabolism in the cretins was low, and there was no change or it grew still lower after the thyroid grafting. The implant was not the best adapted for the purpose or the children were too old.

Exophthalmic Goiter After the Menopause.—The symptoms of exophthalmic goiter, states Blamoutier, in the *Paris Medical* (October 14, 1922), were accompanied with kraurosis of the vulva and intense pruritus, general at first, but later limited to the genital region—all developing after the menopause in the woman of 52. Great improvement to a practical cure followed three roentgen exposures of the thyroid, and several applications of the high frequency current to the vulva, supplemented with pituitary and ovarian treatment. The pruritus subsided entirely, but still returns to a slight extent if the ovarian treatment is neglected for a few days.



Skin-Sight.—Some two years ago we reported in these columns the interesting experiments of Professor Louis Farigoule, of the University of Paris, in extra-retinal vision. Professor Farigoule had trained several soldiers blinded in the war to see with their skins, to recognize objects, read numbers, distinguish colors, by holding their

hands up to them, palms out. The experiments, which were still in an early stage, nevertheless indicated enormous possibilities, but for two years nothing was again heard of either Professor Farigoule or his theories. The reason is now revealed. It appears that the scientists of our day have learned little from history, and the modern savant with unorthodox views is as open, if not to persecution, at least to hostility as in past centuries. Professor Farigoule's demonstrations two years ago were met with severe hostility by his colleagues and contemporaries, and, being a modest, sensitive man, he preferred to withdraw from the public eye, pursuing his studies privately. He hoped, however, that in the meantime some student, with an impartial passion for scientific truth, would take up his theories, put them to the test, and thus verify his findings. But no one came forward and it began to appear that a discovery of real scientific importance was being permitted to die of neglect thru incredulity. During those two years the world was giving an amazing amount of credulity to the theories of obscure pharmacists from Nancy, chemists promising youth and long life to those who would partake of their magic elixirs, and other trifling innovations which smacked of the 16th century. Professor Farigoule was a patient man, but patience has its limits. He therefore decided to abandon his pacifist methods and to become more aggressive, not because he sought publicity but because he felt his obligations to science. He thereupon recently called a conference of specialists, unbelievers as well as believers, to attend a séance in Paris.

The séance was well attended. Eminent biologists, neurologists, specialists of many branches gathered at the séance. In the two years of his retirement, Professor Farigoule had made great progress and his pupils showed a distinct and impressive advance. One of these pupils, blindfolded, was presented with letter-blocks, numerals and colored skeins of wool. Holding his hands up before them, he was able to "see" them and name them. The specialists present were permitted to impose any difficulties, to try any variations so as to convince themselves that no trickery was being employed. (There had been charges of a signalling system between the professor and his pupils.) The tests resisted all these efforts and the specialists, having themselves verified the

genuineness of the unique performance they witnessed, at the end of the séance readily signed a testimonial crediting Professor Farigoule with the discovery of a real scientific theory of great importance. The experiments in extra-retinal vision, being certified to by acknowledged authorities, have now taken a grip on the public interest and the subject is at last receiving the publicity it merits.

Explaining his theory, Professor Farigoule declares that extra-retinal vision involves the functioning of a sense until now ignored—what he calls the paroptic sense. This sense reposes in cells discernible under the microscope in the skin. These cells he calls the "ocelles," veritable "eyes, rudimentary, microscopic, but complete." It is the training of these "ocelles" in the blind which results in something close to actual vision. Asked what the blind may hope for from his experiments, Professor Farigoule said: "It will require several years of further research in order to answer that question. In any case, we know at present that paroptic vision is distinctly inferior to ordinary vision in the clearness of the image, the intensity of light, and probably in the rapidity of conception. To state the matter as optimistically as we can at present, we may be able to give the blind a sense of sight inferior to the one of which they have been deprived. But, for an hour or two daily, they will be able to read, recognize the faces about them, and 'see' more or less as effectively as a near-sighted person deprived of his glasses." This is stating the case with the unsensational modesty and precision of the scientist, but even so, it is promising something which in the future may assume the dimensions of an advance with infinite humanitarian possibilities.

Clear Thinking.—The power to think, consecutively and deeply and clearly, is an avowed and deadly enemy to mistakes and blunders, superstitions, unscientific theories, irrational beliefs, unbridled enthusiasm, crankiness, fanaticism (*Frank Charming Haddock, Med. World*, February, 1923). The lack of thoughtpower creates financial panics and ruins business, unsettles politics and government, keeps the masses down, makes the rich intolerant and unwise, and renders religion non-progressive.

He who cannot think cannot will, in the highest sense. He who cannot will strongly, cannot think long or deeply. All labor in thought involves a measuring capacity for willing. All willed thinking develops will.

Auto-transplantation of Glands.—

Joseph Cummings Chase, the well-known painter, was arrested for speeding, and he says he told the judge this story, which he further alleges caused his discharge:

A negro was arrested for speeding in the South.

"How fast were you going, Sam?" the court asked.

"Ah don't 'zactly know, sah," Sam replied, "but Ah was goin' tol'able fast."

"Thirty miles?"

"Yas, sah; Ah was going more dan dat."

"Forty miles?"

"Oh yas, sah! Ah was goin' more dan forty. Ah was goin' seventy. Ah always does mah seventy."

"What kind of a car have you?"

"A Ford."

"You don't mean to tell me you could make seventy miles an hour in a Ford? That's impossible!"

"Oh, no, sah: 'tain't possible. Ah always makes mah seventy. Dis is one o' dem special Fords. Hit's got a Ford body and—Pierce Arrow glands."—Everybody's.



Treatment of Children in the Home and the Hospital.—Zahorsky (*Jour. of the Amer. Med. Ass'n*, December 9, 1922) claims that if the home is the best place for the care of the healthy child, it is also the best place for the healing of the sick child. Very slight modifications of the household routine are necessary to establish all that is required to care for the sick in the great majority of children's diseases. The educated mother is a better nurse for her sick child than the trained nurse, since the former can see and appreciate changes in her child that the latter can never perceive. The mother understands the language of the young child; the nurse does not. Even when a trained nurse has to be introduced into the household, the mother should watch her child. It is a great defect of medical education that the young physician has not learned to adjust his knowledge to the needs of home therapeutics. In fact, it has been my experience that the modern hospital-trained physician does not feel competent to treat the sick child in the home. He instinctively wants to send it to the hospital. The children's hospital is an expensive institution, and excepting for surgical cases, should serve merely as an adjunct to home practice. The more efficient the work is in the home, the less needful becomes the hospital.

The Treatment of the Common Skin Diseases.—In a lecture on this subject, Sabouraud (*Journ. de Méd. et de Chir. prat.*, February 25, 1922) pointed out that the dermatology is the only part of medicine which is experimental, for we watch what we are doing. We see how a drug acts; whether it irritates or brings about a cure, in which the progress is followed day by day. The more a dermatologist watches, the simpler becomes his practical treatment, and eventually we come to confine our prescriptions to about a dozen drugs, about which we cannot but know well their advantages and drawbacks. We see that the curative effects of these drugs depend very much more directly upon the symptom than upon the disease. We can put aside every consideration except the very appearance of the lesions which require to be healed.

Sulphur is successful in scabies because it is a parasiticide; but leaving this affection on one side, and observing the effects of sulphur in every other dermatosis, we are quickly brought to recognize that it shows a particular election for diseases of the pilo-sebaceous system, for all those that develop around a hair-follicle as the center. Sulphur has the greatest chance of being the drug for choice when the anatomical

The Doctor.—In the name of thousands of unbroken homes in which midnight hand-to-hand fights with death have been fought and won; in the name of thousands of lives rescued from abnormality and made useful; in the name of unshed tears and forestalled pain and baffled death—I doff my hat today to The Doctor (W. J. C., *Detroit News*). May he never have use for his own medicine. May each moment of pain he has saved others, shine in the crown of his life like a bright star. May the children to whom he has saved parents and the parents to whom he has saved children take time to acknowledge the doctor's worth. May his patients pay him his bill. And in the inevitable hour may a certain grim adversary recognize a noble foe and deal gently with the doctor.

site of the affection is a pilo-sebaceous pore. *Bockhart's impetigo* is a small, yellow pustule with a hair in the center; sulphur is the drug for choice to abort it, and to prevent its dissemination.

Acne is of quite a different nature, but has the same localization; sulphur is more effective in the treatment than any other.

Sycosis of the cheeks and of the lip is made up of suppurating, folliculitis; the application of sulphur will yield good, often excellent, results, even when the patient has been using other methods of treatment for years.

Seborrhœa is a different process, characterized by an oily effusion; but this comes from a pilo-sebaceous follicle; sulphur is always the most active measure used against it.

Brocq's pseudo-pelade is quite a different matter, but is produced by a low form of folliculitis, becoming atrophic and finally cicatrical; sulphur is the best application.

When a boil is established, sulphur will not abort it, but it will often do so in the early stage.

In all these afflictions the common sulphur lotion will give the best results:

Precipitated sulphur, washed,	
Alcohol (90°)	of each 10 g.
Distilled water,	
Rose water	of each 50 g.

In a very greasy seborrhœa, this solution should be chosen:

Precipitated sulphur, washed.....	3 g.
Carbon disulphide	50 c. c.
Carbon tetrachloride,	
Anhydrous acetone.....	of each 25 c. c.

Oil of cade is the application for thick, dry squamæ, whatever their nature or origin. It shows itself to be an *eukeratosique*, a protector of keratinization, which is the last state of the epidermic cell. When we meet these thick, dry squamæ, without knowing their name or nature, we know already that oil of cade will be useful. It should be used in a full dose:

Oil of cade,	
Soft paraffin,	
Lanoline.....	equal parts
to make an ointment.	

This mixture can form a basis to which may be added such a mordant drug as salicylic acid, resorcin, or pyrogallic acid; on the other hand, zinc oxide can be added to modify the action.

Whether it is a question of the common pellucides of pityriasis simplex or of steatoid pityriasis, or the squamous crusts of psoriasis, matters very little; the application of oil of cade will be useful. If there is a fatty exudation under the scale which impregnates it, as in seborrhœic pityriasis, we combine sulphur with the oil of cade and obtain excellent results.

In weeping dermatoses, in which there is a copious exudation of clear serum from a decorticated epidermis, whether these are burns or artificial eczema, or due to an acute eczema of whatever cause, and again in impetigo of children, lotions of *Eau d'Alibour* and applications of coal-tar ointments will prove effective. The *Eau d'Alibour* must be well diluted, and the coal-tar ointment not too strong:

Zinc sulphate,	
Copper sulphate.....	of each 0.50 g.
Tincture of saffron.....	0.10 g.
Spirits of camphor	1.0 g.
Distilled water	400 c. e.

The coal-tar ointment should be that recommended by Dino and Brocq:

Coal-tar, washed neutral.....	6 g.
Zinc oxide	3 g.
Lanoline	6 g.
Soft paraffin	18 g.

In intertrigo, which is due to different causes, it is extremely rare not to obtain good results, whatever the nature of the lesion, and wherever its seat, from a daily brisk rubbing with wool moistened with dilute tincture of iodine:

Iodine	0.30 g.
Alcohol (90°)	30.0 g.

If there are sweating lesions as well, the result will be better if coal-tar ointment is applied too.

This alcoholic solution of iodine gives the best results when applied to all epidermal lesions which are of a circinate character. In the case of kerion or of the lesions of sporotrichosis, for which iodine in alcohol is a painful application, recourse should be had to Gram's solution:

Iodine,	
Potassium iodide.....	of each 1 g.
Distilled water	1 litre

Paraffin Dressings in Herpes Zoster.—*Herpes zoster*, or shingles, is generally regarded as a disease which runs a definite course, and in which no treatment is necessary beyond protection of the eruption from traumatism and relief of the pain. For the latter purpose Howard Fox (*Jour. Amer. Med. Ass'n*, December 9, 1922) has found paraffin dressings of great value. The paraffin used was a proprietary compound known as "parresine," which is very similar to the well-known "Paraffin No. 7" used in the treatment of burns (hard paraffin 67.75, soft paraffin 25, olive oil 5, betanaphthol 0.25, eucalyptus oil 2; "parresine" contains also gum elemi and asphalt). This preparation, melted, is sprayed on the cutaneous lesions once daily by means of an atomizer, the area being afterwards covered with a generous layer of absorbent cotton held in place by bandages. In some cases the melted paraffin may be applied by means of cotton swabs, a method that is equally efficient, tho slower and less convenient. When a fresh application is made the previous layer must be removed very gently to avoid rupture of the vesicles: this can generally be accomplished with ease. Should the old layer prove too adherent it may be allowed to remain in place and a fresh coat of paraffin sprayed on the surface.

Fox tried this treatment in twenty selected cases, in all of which the patients suffered pain so severely as seriously to interfere with sleep. In even the severest cases the application of paraffin gave almost immediate relief, followed by more or less freedom from pain for twenty-four hours and by a complete night's rest. Interruption of the treatment was always followed by a return of the pain, which was at once relieved by further treatment.

The paraffin treatment appears to be of value only during the eruptive period. In three cases of neuralgic pain persisting after disappearance of the eruption the paraffin dressings had no effect whatever. The treatment is simple and appears to be well worthy of trial in painful cases of herpes zoster.

Surgical Treatment in Patients With Obstructive Jaundice.—Surgical interference in such cases is always a serious matter. It is of special interest, therefore, to note the experiences of Walters of the Mayo Foundation (*American Journal of Surgery*, January, 1923). He concludes:

1. Since the postoperative intra-abdominal hemorrhage is so often the cause of death of patients with obstructive jaundice the coagulation time of the blood should be determined before operation and if the time is lengthened beyond six minutes an attempt should be made to reduce it by intravenous injections of calcium chlorid.

2. Calcium chlorid, given intravenously, reduces the coagulation time of the blood and combines with the bile pigments circulating in the blood stream rendering them less toxic.

3. The diminution in the supply of glucose to the tissues in the body as a result of the toxemia of the liver-cells is overcome by supplying glucose directly to the tissues by means of proctoclysis and subcutaneous injection.

4. Large quantities of water aid in eliminating the toxic bile pigments and increase the fluids of the body.

5. In operating for obstructive jaundice the various steps of the operation should be carried out with the utmost gentleness, in order not to traumatize the tissues, particularly the liver, and for this reason cholecystectomy should not be performed at the primary operation if it can be avoided.

Treatment of Erysipelas.—Drs. Goubeau and Kieffer (*Med. Press and Circular*, December 20, 1922) recommend the following treatment in cases of erysipelas: Iodine, 3 grams; carbon tetrachloride, 100 c. c. The patch should be painted morning and evening, and particularly over the margin. This preparation may be applied several days consecutively; it is non-irritant and non-inflammable, but one must avoid breathing its fumes, for they are slightly anesthetic.

Treatment of Gonorrhreal Rheumatism by Hypodermic Injection of the Fluid from the Joint.—Dufour, Thiers, and Mlle. Alexewsky (*Journ. de Méd. et de Chir. prat.*, February 10, 1922) draw attention to the treatment of gonorrhreal rheumatism of the knee by drawing off the fluid from the joint and immediately reinjecting this under the skin. The fluid is evacuated from the joint by means of a needle for lumbar puncture passed into the joint on its outer side. Ten of 20 c. c. of the fluid obtained—whatever may be its character, serous or purulent—are

then injected into the subcutaneous tissue on the outer surface of the thigh. This is done every time it is necessary to puncture the joint. The pain and swelling of the joint soon abate, and, in six cases, a cure has been obtained in from four days to one month without any trouble remaining in the joint. The benefit is extended to any concomitant vaginal discharge. No local or general reaction has been observed to follow when the fluid injected has been found to contain gonococci.

Importance of Fluid Intake in Treatment of Kidney Insufficiency.—Pepper (*Penn. Med. Jour.*, November, 1922) emphasizes that there are very few kidney diseases in which there is any excuse for lowering the fluid intake of the body; and, on the other hand, a free fluid intake is indicated and is beneficial in almost all instances of kidney insufficiency and kidney disease. Lowering the water intake of the body does not "rest the kidney." On the contrary, it puts additional strain on the organ's most delicate and most frequently impaired function—that of concentration of the waste products of the body's metabolism from the blood into the urine. Pepper pleads for the wider appreciation of these principles and for free administration of fluid in almost all instances of kidney insufficiency or disease.

Treatment of Pellagra.—The treatment suggested by Goldberger varies very little from that advocated by Deeks in the *So. Med. Jour.* (November, 1922). The main difference is that the latter lays more stress on the avoidance of the excess of carbohydrates, as in this lies the crux of successful treatment. He is convinced that there is no reason why we cannot get rid of pellagra in this country if an educational campaign is instituted, to teach the people how to live and what to eat. Fresh vegetables and fresh fruits are within the reach of all, the whole year around; and a diet consisting of these, with meat, fish, fresh milk, cheese and butter, with whole wheat bread and wholesome cereals, would soon eliminate the disease.

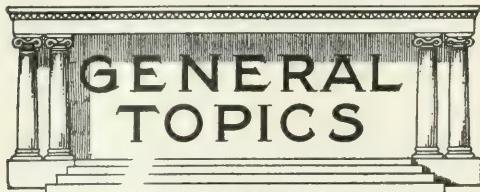
Feeding the New-born Infant.—Bradley in his interesting article in the *Therapeutic Gazette* (January, 1923) states that breast milk is the only safe and sane food for the new-born.

The new-born baby needs no other nutriment than that which it receives from its mother's breast.

With intelligent management 99 per cent. of babies can be breast-fed thru the early months of life.

Fresh cow's milk, modified, is the only plausible substitute for human milk.

If the new-born baby is properly started from birth on a modified milk formula sufficiently low in fat, the necessity for the later use of various concoctions will be eliminated.



Medical Literature.—It is an awe-inspiring sensation, says a writer in the *Boston Medical and Surgical Journal* (December 28, 1922), as we sit upon the bank of the stream, to contemplate the flood of medical literature that pours past us like a mighty current, swollen and angry with the increasing burden of the spring freshets that are forced upon it. Where does it come from and whither does it go? Its

thing, but mine own." We would advise any young author who contemplates throwing his chip upon the stream, either because he feels a message stirring within him, or for reasons of policy, to enter any large medical library and stand for a few moments—like Clemenceau among the mastodons—gazing upon those silent volumes in that great cemetery of ideas. If he is still eager then to scarify white paper, let him get prayerfully to work. It may be that he can carve for himself a seat among the mighty and launch upon the world a new idea.

There are four types that usually deserve consideration. There are those that write but think not; there are those that think not and write not—and this abstinence deserves some credit; there are those that think but write not, and they form an intellectual and untried bulwark; and there are those honored few who think and give us their thoughts. Current medical literature is aptly named, for it comes



A.B. FROST.

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THE COMING STORM.

Mose (for the seventeenth time): Every day, in every way, I'se gittin bettah an' bettah.

schools, we try to think, are in the distant hills of ideas and inspiration; its final resting places, we are forced to admit, are generally the dark cisterns of musty library filing shelves—cisterns always full but seldom drunk from. How often have we considered launching a frail bark on that mad torrent, but timidly withdraw, too conscious of the fate of the other flotsam that we see gliding past us. The bark that we would rather test on that strong course must be well framed and well timbered if we would have it live and tell its tale and carry cargoes.

There is a certain fascination about the printed word, especially if originally penned by oneself, and more especially if bearing the author's name, that is very subtle. We have all felt this hypnotic influence and struggled away from it or succumbed and produced, after great travail, an article, its main claim to distinction expressed by the candid phrase "a poor

thru a stony channel and babbles as is flows, but it waters no gardens of the mind. It would be better for us all if its volume were reduced three-fourths, and so selected and directed as to irrigate the germs of ideas that lie dormant in our minds.

It is not a nihilistic text that we would preach, for the printing press is the greatest constructive engine in the world, but it must grind the wheat and not the chaff. If you have a message that must be delivered to the waiting multitude, no matter what the cost, then like Pheidippides of old, gird up your loins and make the effort; your achievement will be lasting and your memory honored.

Cancer of the Prostate.—Bumpus (*Surg., Gyn. and Obst.*, August, 1922) states that the

results obtained thus far by radium in the treatment of cancer of the prostate are inferior to those obtained by surgery.

2. The new methods of radium application indicate that in the future the results of the two methods will be the same.

3. Partial prostatectomy in cases of carcinoma occasionally proves to be a curative rather than a palliative procedure.

4. A combination of radium and surgery offers the best results.

The Importance of Tonsils.—Outlining the different theories on the functions of tonsils from the beginning, Laskiewicz (*Polska Gazeta Lekarska*, June 11, 1922) comes to the conclusion, that theory as well as the practice of every day of life to which Baurowicz calls special attention, do not in any way support the theory of protecting functions of the tonsils against invasion by microorganisms, as given by Brieger and Görke and then so strongly supported clinically by Fränkel. Laskiewicz concludes that this protection is afforded not by the tonsils alone, but also by the small superficial lymphatic glands of Schaffer, which are distributed all over the mucosa of the mouth and throat. Discussing functions of the tonsils alone, without taking into consideration these others will always bring us only to speculation on this question.

The Useful Lemon.—Be very grateful when "handed a lemon"; for it has many uses in the sickroom, the kitchen, 'round the house and in milady's chamber (*Amer. Food Jour.*).

The juice from half a lemon in half a glass of water before breakfast will correct the most torpid liver and prevent bilious troubles.

For hoarseness, lemon and sugar will prove helpful and pleasant to take and will cure sore throat when used as a gargle.

In fever, the lemon is cooling and of great value for moistening the lips and cleansing the tongue.

Two or three slices of lemon in a cup of strong, hot tea often will cure a nervous headache and refresh the mind and body.

A spoonful of lemon juice in a cup of black coffee frequently will cure bilious headache.

An outward application of lemon juice will allay irritation caused by insect bites.

If a teaspoonful of lemon juice is added to boiling rice or sago, the kernels will be whiter and have a more delicate flavor.

Natural Baths in Heart Affections.—H. R. Pinilla of Madrid (*Arch. Med. Hydrology*, January, 1923), deals with the treatment of heart affections by natural baths. Since the International Congress on Hydrology, held in 1889, the indications for such treatment have been more clearly defined. Baths at one degree above the point of indifference ($33\text{--}34^{\circ}\text{ C.}$ or $91\text{--}93^{\circ}\text{ F.}$) are soothing and sedative, especially baths of the

radio-active thermal waters. Simple hydrotherapy, such as warm sitz baths combined with cooling rain douches, is beneficial as a tonic-sedative procedure, increasing the energy of the heart and moderating the sympathetic action. These methods may be described as a preventive treatment in the early enfeeblement of the heart without organic lesion, described by Mackenzie. The natural involution of an endocarditis can be assisted two or three months after the onset by feebly mineralized baths. Sulphur baths excite the energy of the heart muscle. Mitral cases bear well baths at 37° C. (98° F.) for fifteen minutes, but such baths are improper for aortic cases. Six months after the onset of the endocarditis the indications are different. Blood-pressure may be increased or diminished in effervescent baths. The immediate effect of a carbonated bath is an increase of pressure, which is quickly followed by dilatation of the vessels, with a sense of warmth, a fall of blood-pressure, and increased diuresis. Certain troubles of cardiac origin, such as edema and renal insufficiency, are benefited by drinking diuretic waters.

NEWS NOTES AND ANNOUNCEMENTS

The State Society's Special Train to the A. M. A. Meeting.—The train for the special 25-day tour from New York City to the meeting of the American Medical Association in San Francisco, gotten up under the auspices of the Medical Society of the State of New York, is already filled.

Another train will be arranged for if 125 more subscribers can be secured. In order to do this, however, it will be necessary for applications to be in not later than the 15th of April.

All applications should be sent directly to Mr. J. S. Andrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York City, N. Y.

The American Congress on Internal Medicine will hold its seventh annual clinical session in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning April 2, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session. Dr. Sydney R. Miller, Baltimore, is president.

Address inquiries to the Secretary-General, Dr. Frank Smithies, 1002 N. Dearborn Street, Chicago, Ill.

The American Child Health Association.—With headquarters at 532 Seventeenth Street, Washington, D. C., has been formed for the protection and promotion of child health in America. This association was formed by the amalgamation of the American Child Hygiene Association and the Child Health Organization and will have the full cooperation of the American Relief Administration, under the leadership of Herbert Hoover. The directors include many noted public health authorities and workers in child welfare problems.

To succeed, the new association needs the assistance of every professional worker—every doctor, nurse, teacher, public health official and social service official, and wants the cooperation of the parents, and of the children themselves. The need of concerted action is apparent, when it is recalled that "America now ranks last of all nations advanced enough to have statistics on maternity mortality. It ranks sixth in infant mortality. Of its twenty-two million school children, thirty per cent. are so far under standard weight as to suggest a condition of malnutrition, and three million are in urgent need of medical attention."

Birth Rate Decreasing.—According to statistics compiled by the provisional census bureau of the department of commerce, the birth rate declined and the death rate increased during the last nine months of 1922. The mortality rate ranged from 7.8 in Idaho to 14.3 in Maine, and averaged 11.7 in the states from which statistics were taken for each thousand of population in the period, as compared with an average of 11.6 during the first nine months of 1921. The birth rate ranged from 18.3, in Washington, to 30, in North Carolina, and averaged 22.8 in the first nine months of 1922, as compared with an average of 25 in the same period in 1921.

Meeting of Medical Women.—The annual session of the Medical Women's Association will be held in San Francisco, June 25-26, under the presidency of Dr. Grace N. Kimball, Poughkeepsie, N. Y., at the same time as the annual meeting of the American Medical Association. Dr. Kate Campbell Hurd Mead, Middletown, Conn., is president-elect. Headquarters will be at the Hotel Plaza.

Summer Nursing Courses.—The department of preventive medicine and public health of the University of Minnesota offers for public health nurses, a six weeks' course in maternity and infant hygiene, in cooperation with the division of child hygiene of the State Board of Health, the Visiting Nurse Association of Minneapolis, and the Infant Welfare Society of Minneapolis. The summer session is from June 26 to August 3, 1923.

The course consists of the following subjects: Principles of public health nursing, maternity and child hygiene and supervised field practice in maternity and infant welfare.

In addition to these courses, opportunity is given to elect other subjects offered by other departments during the regular summer session of the university. Those interested in these courses should send to the Registrar, University of Minnesota, for a bulletin of the summer session.

The courses in maternity and infant hygiene are open to all public health nurses who are considered qualified to pursue this type of work to advantage, but college credit will only be given when college entrance requirements have been filled.

To Help the Public Understand the Problems of Medical Practice.—*The Journal of the Indiana State Medical Association* (December 15, 1922) gives a report of an interesting address by Dr. Hiatt. As a solution of the growing menace of quackery he suggests the formation of a representative central committee to disseminate information which is calculated to assist the lay public in discriminating between the pleasing faker and the genuine physician and surgeon who tries to solve the problems confronting him in a scientific and honest manner. Above all, the lay mind should be acquainted with the ever-growing complexity of medical learning and the correspondingly heavy burden of knowledge that has to be absorbed by the medical practitioner.

Red Cross Nurses for Maine and Alaska.—The will of the late Jane A. Delano, who died in France while serving as director of the American Red Cross Nursing Service, provided for missionary nursing service.

Under this provision Mrs. Bertha R. Steeves has been selected for the Alaskan field and Miss Stella Fuller will assume similar work in the islands off the Maine coast.

These nurses will be under the supervision of the American Red Cross. *The American Journal of Public Health* has published the conditions of the bequest under which this service is to be maintained, as follows:

Miss Delano's purpose in endowing this special service as a memorial to her father and mother was to create nursing facilities in isolated districts where no funds are available from governmental or other agencies or from individuals.

Insuring Pure Alcoholics for Prescriptions.—Orders have been issued by the Internal Revenue Commissioner at Washington, D. C., to bottle all bulk liquors now held in bond and to guarantee them as to proof and quality, in order to protect the public from poisonous whisky bought at drug stores on prescriptions. In an effort to curb dealings in denatured and industrial alcohol, the federal prohibition authorities have issued orders for the revocation of scores of dealers' permits, among these being that issued to one of the largest alcohol producing plants in the country, it is stated.

American Medicine

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In Advance

Colds and School Attendance.—The importance of regularity in school attendance is recognized by educators. There is an equal appreciation of the fact that health is of high value as an end in education. Probably from the utilitarian standpoint, health is to be regarded as more desirable than formal school training. Too frequently stress is placed upon the necessity of regular attendance in school, rather than upon regular attendance when free from contagious diseases.

Dr. Howard H. Mason, writing in the *Teachers' College Record*, January, 1923, presents a clear picture of the efforts made at Lincoln School, of New York City, to control school attendance by eliminating the spread of infection by pupils. Careful are due to: (1) Causes other than illness; are due to: (1) Causes other than illness; (2) contagious diseases; (3) those due to respiratory diseases; (4) those due to influenza; and (5) those due to miscellaneous diseases, such as injuries, operations, digestive disturbances, etc.

By a carefully developed program they have decreased the total absences from 14.9 per cent. of all school days in 1917-1918, to 9.3 per cent. in 1921-1922, with a low point reached of 8.6 per cent. in 1920-1921. This result is excellent, not merely because of the saving of school days for educational purposes, but as indicative of better health on the part of the pupils.

The conditions most significant for school control are the respiratory diseases, which include all infections, such as colds, tonsillitis, laryngitis, bronchitis, otitis, etc. This group not only accounted for the largest number of absences, but appeared to be the most difficult to control. They alone showed an increased amount of absence—but part of this must be attributed to the administrative measures taken to reduce the likelihood of spread.

During the last two years the pupils with colds have been excluded as long as they are sneezing, coughing, or have any considerable nasal discharge. This obviously makes children absentees for a day or two longer than the ordinary procedure of merely requiring them to be away for one or two days, and, most generally, merely when they have a febrile reaction.

Experience would appear to indicate that the number of colds developing in the school decreases and, in consequence, there is a tendency for the total number of days lost to decline. Dr. Mason suggests that the policy of exclusion should be enforced more rigidly in the lower than in the upper grades, because of the greater frequency of respiratory infections among the younger children.

The ordinary cold, or coryza, has not received adequate consideration. Too frequently it is deemed merely an inconvenience

or an uncomfortable nuisance. At the Lincoln School more days were lost by pupils because of colds and their complications than because of all other causes combined, and this probably represents general school experience thruout the country.

How long should a child with a common cold be excluded from school? There can be little question that from the standpoint of general school administration, and the protection of the health of school children, every child with coryza is a source of infection. Because of the serious complications, such as otitis, sinusitis, adenitis, and similar conditions that may arise from coryza, it would appear to be a sound policy to protect all children from unnecessary exposure to this disease. Hence, children with colds should be excluded from schools from the practical prophylactic standpoint.

There is reason to believe that a small private school can be more effective in securing the acceptance of a regulation of this character than would be possible under ordinary public school conditions. The daily examination of children in large classes is not always possible. The home conditions which make it possible for children to remain there for what appear to be minor complaints, are not generally adequate or satisfactory. Parents are constantly importuned by educational authorities to send their children to school, lest they fall behind in their work. They are advised not to keep them home for minor conditions. They feel and believe that educational opportunities must not be sacrificed for a single moment. In addition, the medical profession, in general, is inclined to underestimate the seriousness of colds and in the absence of existent complications, to permit children to attend to their regular educational routine.

A host of complicating circumstances, traditions, theories, and laws combine to send children to school, when they are physically below par, and potentially infective to others. There can be no doubt that the ideal medical position is to advocate school absence far more frequently than is now the practice. Nor is there very much scientific ground upon which to base an opinion that a child with a cold is better off at school, if one considers the relation of the individual pupil to his classmates. Nevertheless, it will probably be some time before colds will be accepted as an adequate excuse for school absence. The mere fact that we know so little about coryza indicates the importance of giving it more thoughtful attention. It is a condition which does not induce much of an immunity and, indeed, appears to reduce individual resistance to various pathogenic organisms.

Certainly, until some protective vaccine is devised, or a method of protecting a class can be determined, it is more sensible to adopt the program of school exclusion during the presence of coryza and other respiratory diseases. It cannot be denied that the common cold is a serious factor in the morbidity and mortality of children during the school age.

Social Prognosis.—In discussing "Social Pediatrics" in the *Archives of Pediatrics* for March, 1923, Wile refers to the social prognosis of disease as having a wider significance than prognosis as individually applied. In the social sense, proghosis does not concern itself merely with life or death, but with the economic and social costs. To illustrate, considering polioencephalitis, the pediatricist's prognosis would deal mainly with the likelihood of death or the degree

of permanent paralysis. The social prognosis would take cognizance of retained capacity for normal functioning and the increased cost of education or re-education, the necessity of constructive communal efforts for rehabilitation, the organization of agencies for the after care of cripples, and some definite provision for the permanent care of those completely incapacitated for even low levels of functioning.

It is apparent that social prognosis considers an epidemic in its massiveness, taking account of the rate and incidence of mortality in relation to the proportion of handicapped persons who will remain as partial or total communal liabilities.

From a social standpoint there is a marked difference between a fulminating and a chronic disease. The fatality is the same, but the sudden death of a child or an adult is accompanied by a lower economic strain and is less exhaustive of familial vitality. The course of a disease has definite influence upon its social results, irrespective of whether fatality is the end. This is especially evident in the social consequences of chronic tuberculosis of the bones and joints, as compared with an acute miliary tuberculosis of tuberculous meningitis.

Death in itself, from a social standpoint, may result in social advantage, but ordinarily, from the individual standpoint, death would represent the worst prognosis. It is undeniable that death prognosticated for hydrocephalic monsters, the hopelessly crippled, cretins, idiots, and low-grade imbeciles would represent a favorable social prognosis.

Numerous criticisms have been levelled against modern medico-social service on the ground that it interferes with the action of the biologic principle of the survival of the fittest. It has been repeatedly urged that

probably the world would be just as well off if there were not so many child-saving agencies at work. It may appear to be reasonable to some to object to medical benefits to certain families in the community, on the ground that it interferes with the normal and natural evolution of the race, but this might be said to be true of all tendencies of civilization. Every deviation from primitive conditions that involves increasing care for the person or community interferes with natural law, if this is merely interpreted as exposure to the elements.

Eugenic theories must, in the main, harmonize with human and humane ethics. It is true that capital punishment appears as an example of overcoming dysgenic forms, but its origin lies in the theory of punitive procedures, rather than eugenic benefits. It would be difficult to secure adherence now to any system based upon the Spartan theory of exposure or the bloody laws of Draco. There is no inconsistency, however, in recognizing a social gain thru an individual death that arises in spite of medical aid, or that may be deemed desirable on the grounds of organized social opinion.

The social prognosis of gonorrhreal ophthalmia is entirely different from that of scarlatinal nephritis. It is apparent that, prognostically, cretinism, dental decay, or chorea, may present a higher degree of social liability than results from Vincent's angina, diabetes mellitus, or fulminating pneumonia.

In the determination of the social approach to medical problems, social prognosis merits study. The end-results of disease are to be measured in terms of social consequence. Only by this point of view is it possible to evaluate the results of disease

in such a manner as to determine the most advantageous directions for communal activities. There is involved a recognition of the percental occurrence, of permanent complications, or sequelæ, in terms of vitality, and physical and mental potentials. There is involved a consideration of the reciprocal relations of each specific disease, and the general welfare, and of the efficiency index of the individual victims of the disease and that of the social group.

This larger conception of social prognosis possesses utility. It is manifest that social devastation will arise in proportion to the handicapping of individuals, but the degree of handicapping of communities is dependent upon the qualitative handicap to an even greater degree than upon the quantitative defect. It is not merely a question of how many persons are liabilities, but how great liabilities they are. Law recognizes these variations, in the adjustment of litigation in negligence, and there is every reason to believe that these differentiations should receive further consideration at the hands of the administrators of communities. An epidemic of poliomyelitis is fraught with greater social handicaps than an epidemic of influenza, because of the permanent results.

The mere question of death rate is not an adequate measure of communal suffering in epidemic disease.

The Yugoslavia Health Program.—In the establishment of new governments provided for in the Treaty of Versailles, numerous problems of organization arose, none of which were more serious than those related to public health. It is highly illuminating to note the progress that has been made in overcoming war conditions

along economic lines and particularly the phases which involve raising the standards of public health.

The public health activities in Yugoslavia, *Public Health Report*, February 16, 1923, illustrate the lines along which efforts are being directed. At the end of 1921 sanitary laws were approved for the purpose of unifying sanitary legislation. Laws were enacted providing for the epidemiologic service of physicians, the creation of special sanitary institutes for the study and control of contagious diseases, together with the creation of a permanent epidemiologic commission.

Since 1920 health education has been directed under a Ministry of Health, thru a section of service designed to give popular instruction in hygiene. More than five thousand meetings have been held, at which general instruction has been given, utilizing pictures, pamphlets, posters, and placards, written along lines advocated in this country.

The great advance in the study of infectious diseases has been made thru the establishment of sixteen bacteriologic stations, with well-defined districts, together with a special institute at Belgrade for the study of tropical diseases. Most potent for public safety are the one hundred and twenty mobile equipments for disinfection, together with four "sanitary trains." The importance of this for overcoming the degree of insanitation cannot be overestimated.

A school for nurses, under the auspices of the Red Cross and the American Mission is extending its facilities to accommodate one hundred and twenty student nurses and makes a provision for a four years' course. This in itself will tend to meet a difficulty of considerable magnitude in a new field, where nursing has not been on a high plane.

The special problems of safety involve an

attack upon malaria, for which purpose effective field equipment has been provided, including movable laboratories and sanitary trains, supplemented by bacteriologic stations and the administration of quinine.

Trachoma is of such importance that a special hospital has been established at Prilep, and itinerant, or field hospitals, have been provided in various sections of the country. The necessity for overcoming the devastating effects of eye diseases has led to the formation of a program designed to save the citizens the handicaps that result from trachoma and other ocular diseases.

Thirty tuberculosis dispensaries and four preventoria, an open-air school, with facilities for sun baths indicate the seriousness of the service offered to decrease tuberculosis in the country.

It is obvious that this new nationality is endeavoring to apply to its problems the most modern methods of attack. Previous to the great war, the sundry states then compromising Yugoslavia were notoriously lacking in sanitary development. Inertia and indifference combined to retard sanitary advancement. The hardships of war, the devastation and disease, contrasted with the more rational modernized health services of other nations have shown the possibilities of preventing disease and improving health standards. The new nation has awakened, and in the course of its policy of regeneration, has given material attention to health as it involves national welfare. The principles involved, recognized and accepted in Yugoslavia, represent an advance in national thinking.

Even tho the standards of accomplishment are not yet determined, the evident attempt to improve national health bears witness to the desire to incorporate into rational government a harmonized policy for

health protection. The emphasis upon preventive medicine is noteworthy.

What has occurred in Yugoslavia, particularly during the last two years, is occurring elsewhere. The influence of the International Health Board, the American Red Cross, the American Friends' Committee, the United States Public Health Service, and similar types of organizations, under federal, state, semi-private, or private auspices has made a definite impression thruout the world. The largest contribution to international restoration has arisen from the earnest, devoted, serious thinking of the organizations interested in public health. The acceptance of their ideas and ideals by newly established governments is a tribute to the splendid examples of health work and organization they have given.

The largest constructive result of a catastrophic war is to be found in the organization and re-organization of machinery, by means of which health may be preserved, lives strengthened, and physical handicaps decreased. Yugoslavia is merely a national symbol of the far-reaching results of intelligent health organization.

Alcohol and Pneumonia.—It is interesting to take cognizance of the influence of the prohibition laws upon the health of the community. It is unnecessary to discuss the part that ineptitude plays in the causation of disease, or to reopen at this time, the questions concerning the therapeutic and dietetic values of alcohol. It is probably indubitable that the decreased consumption of strong alcoholic liquors affects numerous prognoses.

In the *Journal of the American Medical Association*, March 17, 1923, Capps and Coleman present an interesting statistical

report on "Influence of Alcohol on Prognosis of Pneumonia in Cook County Hospital." The data considered result from a study of records covering six years before prohibition and the first two years after prohibition. The period from 1917 to 1921 was omitted, because of the various epidemics existent during that period that produced atypical forms of pneumonia. For statistical purposes they formed three groups: the non- or slight users, the moderate users, and the excessive users of alcoholic beverages. The third group included those who drank regularly considerable amounts of beer and spirits, or who became intoxicated at times. Care was taken to exclude all cases wherein there was no clear record concerning alcoholic habits.

Only male patients above the age of eighteen were investigated. The complete group comprises 3,422 cases of lobar pneumonia, 844 of which were in the first group, 1,095 in the second group, and 1,443 in the third group. The studies were re-arranged, in order to show the mortality of various age decades.

The authors do not claim that their studies indicate that prohibition legislation is lessening the death rate of pneumonia, or whether the prevalence of drinking has decreased. They rather definitely demonstrate that the use of alcohol has a harmful effect and reduces the chances of recovery among those afflicted with lobar pneumonia.

The complete figures indicate that the mortality at all times was considerably higher in moderate users than among light users or abstainers, and that the mortality among excessive users was higher than among moderate users. This fact was in no way vitiated by eliminating the age factor and considering comparative mortality rates in the same decades, found in the three

groups. For example, during the decade thirty to thirty-nine years, embracing the largest number of patients, the mortality in the age of the light user group was 18.4 per cent.; in the moderate user group, 29.1 per cent.; and in the excessive user group, 42.5 per cent.

In their experience there appears to be, from the comparative figures utilized, an increase in the proportion of abstainers or light users and a noticeably corresponding decrease in the excessive or moderate drinkers. Delirium tremens has practically disappeared and is highly suggestive of a lowered alcohol consumption.

A study of this kind is of immense importance and indicates that in all probability the mortality rate from lobar pneumonia will manifest a reasonable decrease, with the lessening of the amount of strong drink imbibed. It will be valuable, also, to note whether the incidence of lobar pneumonia is greatly affected, and whether, as has been urged by many, alcoholic tendencies predispose to lobar pneumonia. There are so many variable factors, however, that it will take many years and careful statistical analysis to determine the part played by alcohol in the causation of disease. Much light in the future will be shed upon the part that the drinking habit has played in the past in predisposing to arteriosclerosis, nephritis, cirrhosis of the liver, and similar diseased states.

It would appear to be a safe conjecture that any single disease, like lobar pneumonia, treated in one institution, and receiving adequate medical supervision and care, serves as a reasonable basis for study, in order to estimate the influence of a single factor among all the variables entering into prognostic science. Upon this basis the Cook County study would appear to be a

fairly accurate investigation, whose resultant conclusions are worthy of acceptance. It is significant, therefore, that there should be a decreased mortality rate for lobar pneumonia, as a result of a less alcoholic type of patient.

In terms of human lives, it may actually mean a saving of fifty per cent. of those who in pre-prohibition days would have died, assuming that the virulence of lobar pneumonia remain fairly constant.

Accident Reduction.—The experience of the United States Steel Corporation in accident prevention is highly suggestive. Its activities have resulted in the definite saving from maiming and deaths of more than thirty-five thousand employees during a period of sixteen years.

An analysis of more than two hundred and fifty thousand accidents which have occurred in large plants over a long period of time indicates that only 4.88 per cent. of the accidents were due directly to machinery causes, eliminating the accidents involving overhead cranes. This low percentage is the obvious result of protection of employees afforded by the installation of mechanical safeguards. That machinery is not to be regarded longer as the main causative factor in accidents is patent from the fact that hand labor was found to be responsible for 44.04 per cent. of the recorded accidents. Hand labor operated as a cause thru personal carelessness and the failure of workmen to follow out directions given for the purpose of insuring safety.

It is immediately evident that education within the plant is as essential for the prevention of accidents as provisions in engineering and the utilization of mechanical protective devices. It is possible thru legis-

lation to demand adequate factory construction, guarded machinery, the maintenance and operation of first-aid committees, but it is exceedingly difficult to secure thru legislative enactment the degree of personal interest and application of principles that will result in the reduction of the workman as his own greatest hazard. It is, therefore, significant to note that the United States Steel Corporation makes use of approximately nine thousand employees as members of safety committees, whose function it is to make plant or departmental inspections, review accidents, suggest remedies, and consider the multiplicity of problems involved in increasing the safety of operation.

The meetings of the departmental safety committees are attended by the employees of the departments and serve as a fundamental unit for inculcating the ideas and ideals of the safety first programs, which are further supplemented by motion pictures, bulletins, literature in various languages, and similar guidance by personal counsel.

New employees are not merely trained in their particular process, but receive collateral knowledge pertaining to their duties, and essential for self-protection and the protection of their fellow workmen. There are warnings as to inherent hazards, and caution is enjoined to observe all the regulations which have been adopted for their protection.

It is difficult to control the essentially human factor in work that involves long hours, monotony of employment, and lack of particular motivation. Inexperience carries with it a considerable number of hazards, while prolonged experience possesses its problems of a different character. There can be little question that the safe operation of industry cannot be reduced to

its lowest terms unless the continued interest of the employees is secured and they are stimulated to accept the principles involved of the interdependence of workmen for mutual safety.

Progress in Plant Operation.—The past fifteen years have marked a period of advance in securing more effective control over the dangers of plant operation that arise from the mechanical side. The further reductions that are possible must include a higher degree of attention to the personnel factor. A certain pressure has been placed upon employers thru the operation of the Workmen's Compensation Act, but it is difficult to secure similarly forceful argument to apply to employees. The human equation must be recognized and solved, in order to obtain the value of the unknown factor which is to be of service. Certainly the organization of employees in industry for physical protection is no less important than the banding together for economic protection.

The restriction of immigration, which is curtailing the number of workmen available for rough processes, serves as another reason for the employer's interest in safeguarding the lives and limbs of employees. This is but a single element in the problem of labor turnover.

The very possibilities of securing ample employment operates against employees giving the maximum consideration to their own welfare. If self-protection becomes too onerous, it is easy to change one's job. It would seem as tho the industrial hygienist had a specific problem in this direction, requiring a higher degree of tact, understanding, persuasiveness, and forcefulness to bring about the educational reconstruction requisite to reduce the personal hazard con-

stituted by the industrial unhygienic employee.

Safety and welfare are of primary importance today and are receiving a considerable degree of attention, but by no means the amount of thought that they merit. It is essentially a field in which the industrial advisors should develop more efficient programs by means of which to secure the maximum operation of unions and other organizations interested in promoting personal safety. Accident prevention cannot reach its lowest terms without more adequate consideration of the worker as a causative factor in the accident.

Typhoid Fever Decrease.—Since 1913 *The Journal of the American Medical Association* has presented an annual report upon the prevalence of typhoid fever in the largest cities of the United States. The Eleventh Annual Report in the *Journal of the American Medical Association*, March 10, 1923, indicates the excellent progress that has been made in typhoid control. In 1910 the typhoid death rate per one hundred thousand population for fifty-seven cities was 19.59, while in 1922, for the same cities, the rate had fallen to 3.15, the lowest level thus far reached.

In the twelve largest cities of the United States, with a population of more than five hundred thousand, all had a typhoid rate under 5.0 save one, with Chicago leading, with a rate of 1.0. In nine cities from three hundred thousand to five hundred thousand population, six were below 5.0. In twelve cities of from two hundred thousand to three hundred thousand population, nine were under 5.0 and Providence justified its name with a complete freedom from typhoid deaths. Among ten cities from

one hundred and fifty thousand to two hundred thousand population, five had a typhoid death rate below 5.0. Eight of seventeen cities with from one hundred thousand to twenty-five thousand population had typhoid death rates below 5.0.

It is exceedingly significant to note this remarkable decline in urban typhoid fever. It is highly suggestive that outside infection bears an important relation to the total number of cases reported in cities. It is difficult to check up the actual mortality rate of a city, until non-resident deaths are deducted from the totals. Inasmuch as reliable information on this point is not generally available, a natural error occurs in some of the statistical information. Health officers, however, are aware of the situation and consequently particularly interested in the presence of typhoid fever in suburban or nearby districts. Such foci of infection not merely tend to increase the mortality rate of cities, from the transfer of the typhoid patient to the city hospitals, but also serve as a definite source of possible infection of the food supply, as well as appearing to be a factor determining the number of typhoid carriers, free to spread infection.

The experience of New York City indicates that the main sources of its typhoid fever have been bathing in polluted waters, eating contaminated shell fish, infected ice cream, and similar foodstuffs, wherein a carrier has been suspected, or actually detected as the real culprit.

The tremendous decrease in typhoid fever in American cities is further emphasized by the fact that eighteen cities had a typhoid rate during 1922 of 2.0 or less, almost double the largest number previously recorded in 1920. Further-

more, there were only five cities with a rate over 10.0, as compared with nineteen of these cities as recently as 1917. These figures are not to serve as a source of congratulation, because typhoid fever belongs in the category of preventable diseases. Until its fatality rate approaches the irreducible minimum, there is every reason for persisting in every phase of the anti-typhoid campaign. Probably there will always be some typhoid fever, as a result of the presence of carriers, but this likelihood constantly diminishes with the decrease of the incidence of the disease, which gives rise to new typhoid carriers.

At present the honor roll includes cities with typhoid death rates of 2.0 or less, and this represents a fairly satisfactory goal towards which to work for the present, tho the increasing number of cities with typhoid fatality rate 1.0 or below, is constantly growing. There may be annual variations, and temporarily some cities will show moderate upward trends, but the general curve is proceeding towards the vanishing point.

What the decline of typhoid fever means in terms of human lives may be appreciated by the experience of Philadelphia. In 1876 the typhoid mortality rate approximated one hundred per one hundred thousand. From 1900 to 1910 the rate was around 70, while for the period 1916-1920, it was only 4.9. Thus, within a period of fifty years, only one person died from typhoid fever, where previously twenty had succumbed.

Why Worry?

Everywhere are smiles to spare
And everywhere a song—
Our good old world can run itself
And keep from going wrong.
—WILBUR D. NESBIT.



The Death of Frederick H. Robinson.—The passing of the talented young editor of the *Medical Review of Reviews*



FREDERICK H. ROBINSON

respected him accordingly. Fine personality, he had no trouble in making friends and holding them. Indeed, it was to the foregoing he largely owed the success achieved in his various undertakings.

Born in New York City on December 17, 1890, he was, therefore, only thirty-two years of age at the time of his decease.

When he acquired the *Medical Review of Reviews* in 1912, Frederick H. Robinson was only in his twenty-second year, but within a short time he made the *Review* one of the most influential medical journals in the country. In fact, few other medical journals ever attracted as much publicity as did the *Medical Review of Reviews* under his management.

Few medical editors of his time were interviewed as much, and on so many different topics, as was Frederick H. Robinson. Being a layman he could speak with a freedom that a physician never could, and

removes one who, tho not a medical man, has, nevertheless, taken a conspicuous part in the field of medicine. Not always did we agree with this young man's views, but we never doubted the earnest and sincere purpose of all he wrote or did and, therefore, re-

Blessed with a

as a consequence the opinions he expressed were sometimes misunderstood and criticized. But that he sought to accomplish real betterment in connection with anything he discussed or condemned has never been questioned. It was eminently characteristic of him that as he lay on his deathbed he wrote the editorial on "The Nurse," which has received so much attention.

As a part of his sociologic activity, Robinson produced Brieux's "Damaged Goods," Wedekind's "Awakening of Spring," "Goat Alley," by Ernest Howard Culberson, and Milne's "The Great Broxopp."

He was a member of the City Club of New York, the Transportation Club and the City Club.

Frederick Robinson was a prodigious worker and no undertaking that appealed as worth while and liable to prove helpful to humanity ever dismayed him. Not all these undertakings were equally successful, at least from financial standpoints. But this never discouraged him if he felt that some good had been accomplished.

He made mistakes like every other man who tries to do things. But they were honest mistakes, and there is hardly any higher compliment that can be paid to a man's work.

The world is poorer indeed for the passing of Frederick H. Robinson, and the many earnest, thinking people who knew him, and not only realized the fidelity of purpose in everything he undertook, but have felt the charm of the kind and considerate way in which he treated all with whom he dealt, will mourn his loss for many a day.

Autosuggestion and the Small Town Practitioner.—It is not without significance that M. Emile Coué, the famous exponent of autosuggestion, is not the product

of the great city of Paris, but of the more modest community of Nancy, and that the doctrine of autosuggestion, tho hardly new in itself, has been given a fresh impetus by the successes first reported from a French city of minor importance in point of population. That this should be so is easily understandable, for the elemental nature of autosuggestive practice is likely to find more fertile soil in small communities than in large urban centers—that is, more fertile soil in point of actual results; for, tho the jaded populations of larger cities may embrace the doctrines of any new creed or system of thought as a relief merely from the monotony of tea and bridge and the tedious diversions of the idle classes, the inhabitants of more remote communities embrace such doctrines with a simple, honest faith which is more apt to lead to excellent results. M. Coué's success during his visit to this country was chiefly social and journalistic, but his success in his own little community, if reports are to be credited, are distinctly more imposing. This fact strengthens the conviction, gradually emerging from the abundant discussions of the benefits of autosuggestion, that autosuggestive practice is preeminently a field for the small town practitioner, whose opportunities in this respect are greatly superior to that of the urban physician. Such a conclusion is compatible, both with the character of the practitioner in remote sections and with the attitude of the population toward him. In the small community, the traditional attitude of the population toward the doctor is that toward the primitive "healer," and the faith enjoyed by such a "healer" is more sincere and comprehensive than the confidence shown toward a specialist in large cities by his more sophisticated patients. For the contact of the specialist with his patients is very superficial and lacking in that intimacy which is characteristic of the close relation between practitioner and patient in the small community. The rôle of the country doctor, for example, is not alone that of a medical man—he is friend, advisor, confessor at once, and he thus has access to the inner life of his patients. Half the doctor's battle is won if he can inspire his patient with the feeling that he is a friend, and the country practitioner always begins with this advantage, an advantage which largely balances the superior equipment of the urban physi-

cian. And the mental sway over the rural patient is, as a consequence, a practically easy matter. In the face of the skepticism of the city patient toward the doctor's assurance of improvement, interpreted generally as a strictly professional optimism, the country patient accepts such assurances by his local doctor as the observations of a friend and, therefore, reposes an unquestioning faith in them. The mind of the country patient is, therefore, a soil in which his doctor can plant whatever seed he wishes. His opportunity for the practice of autosuggestion is therefore unlimited, and the efficiency of country doctors, if surprising in view of numerous limitations in a technical way, can be explained generally by this employment of autosuggestion, whether used deliberately or unconsciously. With the deliberate employment of the autosuggestive method, of undeniable value in many cases, the country practitioner has in his possession an instrument more potent for good than the elaborate instrumental innovations accessible to his urban colleagues, and an understanding use of this instrument could prove of inestimable value.

A Normal Attitude Toward Sex.—

There is a favorite smoking-room story which points an excellent moral and which, for publication purposes, may be paraphrased as follows: A Frenchman and an Irishman were arguing as to the total number of beverages, alcoholic and otherwise, which existed in the world. The Frenchman insisted that there were eighty-two, while the Irishman equally insisted that there were eighty-three. A wager was laid, and the Irishman began to enumerate them: "First, there is water." "Ah," exclaimed the Frenchman, "you win. I had forgotten all about that one." It seems that all sex investigations in recent years have made the error of omission which the Frenchman discovered on enumeration, and, while the whole pathologic field has been thoroly studied, the normal aspects of the sex problem have been entirely overlooked. These studies have so completely excluded any consideration of sex as a normal expression that it had become customary to regard it as an abnormality, yet sex for very many people is a thoroly normal, thoroly healthy matter, made complex only by such changes

in social and ethical conditions as have altered all human relations with the advance of time. The Bureau of Social Hygiene has, therefore, assumed a timely and highly commendable responsibility in diverting the straying sex question to its normal path by its inquiry into the normal aspects of sex life in the average individual and the examination of these aspects in their relation to marriage and happiness.

Despite the vogue of degeneracy and perversion, for many persons sex expression has still remained an innocent and natural reflex to the primitive racial impulse, and yet such phases of this expression, like spooning, flirting and other manifestations of the amorous instinct, certainly indispensable to an understanding of the sex problem, have been entirely overlooked by investigators. As Dr. Katherine B. Davis, secretary of the Bureau so well says: "Sex is scientifically an unexplored country except on the pathologic side. Our study raises important questions and points out the necessity for further study." Whether the Bureau's questionnaire, mailed to 5,000 selected women, can be trusted accurately to designate the conditions into which it is trying to probe may be somewhat doubtful, however. The first thousand replies, from married women, would indicate that the margin of error is very wide, not only because general conclusions cannot be drawn from so small a number of cases, but because there enters into the inquiry an element of very challengeable personal probity in the answers which casts suspicion on the fidelity of the persons approached to strictly scientific truthfulness. For example, of the first thousand married women, 872 replied that they were happily married. This percentage is so flagrantly contradictory of the actual statistics of marriage that one cannot help suspecting the intrusion of a natural hesitation on the part of disillusioned women to avow their disappointment. Yet, on the other hand, the admission by 31 per cent. of the women that they flirted promiscuously before marriage has every appearance of being a fairly accurate indication of reality. Perhaps when the questionnaire has reached many thousands of women and the margin of error and natural reticence is discounted, some very illuminating truths may be gathered. The investigation will be followed with interest, notably the results of the inquiry among bachelor girls who

are asked to give their reasons for not marrying. From the whole perhaps there may issue a few general conclusions which will add to our knowledge of a very obscure subject. And in addition some light may be thrown on a few of the by-products of sex and marriage: As, for instance, the revelation that, of the thousand married women, 74 per cent. practice birth control for health or economic reasons, while 26 per cent. do so because they do not want children. The Bureau of Social Hygiene is rendering a splendid public service by its inquiry, but the most heartening aspect of the undertaking is the comforting thought that there are some investigators who have not been so completely diverted by an interest in the pathologic as to fail to place a just estimate on the more normal aspects of sex.

Are We Living Longer?—In the face of the repeated insistence of recent years that the span of life was decreasing, the startling statement that people are now living longer than they were in the last century was made at the annual conference of heads of insurance organizations and social workers at Westminster, London, early in April. Sir Kingsley Wood, M. P., presiding over the conference, declared that statistics support this optimism. In England and Wales, at the present time, he said, there were 600,000 persons over seventy years of age, and 60,000 over eighty-five. Last year there were recorded the deaths of fifty-nine persons who lived to be 100 or more. Of these, thirty-eight were women, including thirty-one widows. This was the outstanding feature of the many interesting reports brought before the convention, and a summary of these reports throws interesting light on health conditions in Great Britain today. Notwithstanding the war, there are today many indications of a favorable and improving state of affairs. The trend of the death rate in England and Wales is steadily downwards and the decline has taken place in all ages. During the first two decades of the present century there has been a remarkable fall in the infant mortality rate. In 1920 the rate was 80 per 1,000, the lowest ever recorded. Last year it was 83 per 1,000, a striking comparison with the average rate of 150 per 1,000 at the beginning of the century. Medical science, it was re-

ported, had made a great advance in the fight against such diseases as typhus, scarlet fever, diphtheria, smallpox and enteric, but a heavy life tax was still being paid in tuberculosis, cancer and diseases of the nervous system.

There was a general consensus of opinion at the convention that tuberculosis was a house disease. Bad and insufficient housing was the root cause of it and other diseases. Apart from influenza and cancer, there was far too much of what might be called general sickness. Over \$15,000,000 was paid every year in sickness benefit to men on that account alone. There were constantly over half a million men on the sick list. There were three ominous matters which might well tend to dampen optimism in a study of the health of the nation's children. There were always ten per cent. of the children attending elementary schools who, altho not mentally deficient, proved to be seriously dull and backward. Eight per cent. of the London school children were always absent on account of illness. Medical and surgical treatment had to be provided for over 200,000 children in London alone. Probably 500,000 children thruout England had to be treated for various defects and diseases. But there was a bright side. The cleanliness of children, their clothing, and their health generally were in steady progress of improvement. It was noteworthy that in a careless age there was an increased and more intelligent sense of parental responsibility in regard to the importance of the health of the children. Sir Kingsley Wood advocated the establishment and endowment of a national commission which would further encourage and support talent and brains in the investigation of medical and physical science. The whole expenditure of the Medical Research Council permitted by Parliament last year, he pointed out, was the beggarly sum of \$650,000.

The Spahlinger Treatment of Tuberculosis.—Every now and then an account of a wonderful means for curing tuberculosis crops up. In fact, the same thing happens in the case of all deadly diseases. Nearly always, it has been found that these miraculous cures are products of too vivid imagination or are engineered for the purpose of making money. The fanatics, those

who believe firmly in their methods, are to be forgiven for the harm they may do, as, at any rate, they are honest and in truth may be working in the right direction. But those who intentionally for the sake of gain prey upon the gullibility of those afflicted with a mortal disease are guilty of a crime and should be punished accordingly. The very sick, those who are aware so far as existing knowledge and treatment of their disease are concerned that they are practically doomed, will clutch at any straw and, of course, these are the ones who in their despair are eager to try any new remedy brought out and are willing victims of the fraudulent healer or of the man obsessed with the merits of his own discovery or of new methods of treatment. It is difficult often to discriminate between true and false and, therefore, a worthless remedy is sometimes given a lengthy trial and may even be established in the public confidence before it is proved to be of no use or perhaps harmful. However, the medical profession naturally have become skeptical of cures, and proofs must be very definite before, speaking generally, they will commit themselves to a commendation of new modes of treatment. It appears, judging from the medical and lay journals of Great Britain, that an earnest discussion is being waged with regard to a treatment for tuberculosis found out and carried on in Geneva, Switzerland, by a M. Spahlinger. It is a serum treatment and for some years before the war it is stated that its use was followed by markedly good results. It is further stated that the supply of serum is now nearly exhausted and until sufficient money is forthcoming that the supply cannot be replenished. However, the point of the matter which renders the Spahlinger treatment different from the vast majority of methods of treatment of disease which have been widely heralded in the lay press is that a large number of British medical men, who as a class are reputed to be very conservative, several of them eminent in the profession, declare themselves publicly firm believers in the treatment. Letters on the subject have flowed in to the *Lancet* during the past few weeks, nearly all of which are written by well-known men, strongly in favor of the Spahlinger method. Among these writers is Dr. Leonard Williams, an authority on tuberculosis and who has contributed original articles to AMERICAN

MEDICINE on more than one occasion. Dr. Williams has visited M. Spahlinger in Geneva many times, knows all about the treatment, at least about its effects, and cannot say too much in praise of it. His testimony is valuable and he is so ardent an advocate that he suggests a press campaign to obtain the necessary funds not only that the serum may be made for treatment, but that M. Spahlinger may be afforded the opportunity to submit to the independent investigation of his remedy proposed in a leading article in the *Lancet* of February 17th last. Most of the other letters are written in the same eulogistic strain and there is no doubt that there is a strong movement in Great Britain in support of the Spahlinger treatment and that in this movement many authorities on tuberculosis are taking an active part. The British Red Cross Society have allocated a goodly sum from their surplus funds to aid in this movement and it seems fairly certain that if a press campaign is launched in Great Britain to raise funds for the purpose referred to that there will be no difficulty in obtaining sufficient money to make a large supply of serum and to thoroly and impartially investigate the matter. Among the laudatory letters there is one which contains a somewhat discordant note. Dr. S. Lyle Cummins, Professor of Hygiene at the Welsh National School for Medicine, Cardiff, has this to say in the course of a letter published in the *Lancet*, March 10th last: "May I suggest, without attempting to make any reflection on the utility of M. Spahlinger's numerous preparations, that the medical profession is still uninformed on certain important points: How are the remedies prepared? How are they standardized? How many cases, and at what clinical stage, have been treated and for how long have they been observed? How many are now 'well and at work,' 'improved,' 'stationary,' 'worse' and 'dead'?" It is possible that M. Spahlinger's preparations or some of them may yet be proved to be of great value, and, if so, he will have conferred a benefit on humanity. But the matter is urgent and time is being lost. What a pity that he does not follow the example of Pasteur, a non-medical scientist, who laid the foundation of modern medicine, by publishing exact details of his methods in order that they may be confirmed by other workers. This would help matters more than the building

of an institute for the production of what is after all a "secret remedy."

And thus the matter stands in Great Britain. M. Spahlinger has a numerous and influential following among members of the medical profession as well as among the community at large. Moreover, many of the British medical supporters have had experience in the persons of patients suffering from tuberculosis, and one or two cases reported in advanced stages, showed the Spahlinger treatment to be remarkably effective. It seems unwise, almost inhuman, to place obstacles in the way of raising enough money to thoroly test a treatment supported by such indubitably weighty evidence. By so doing, a real cure for tuberculosis may be lost to the world, a disaster of the first magnitude. Another reason why it is highly desirable that an independent authoritative investigation should be held is that it would settle the question, at any rate, with the medical profession, so far as such questions can be settled. If favorable a new era in the treatment of tuberculosis will be opened and, if unfavorable, no longer will false hopes be raised in the breasts of the afflicted, at least, if such hopes still continue, the medical profession can with a clear conscience point to the results of the investigation for strongly discouraging the same. In any event, the interest in the Spahlinger treatment being world-wide, it will be to the benefit of all that a thoro investigation by experts shall be made as soon as possible. Of course, if the advice of Dr. Cummins to M. Spahlinger, to reveal himself the composition of the serum were followed, it would greatly simplify matters. On the other hand, it appears only fair that the originator of a cure, if genuine, of a disease of the nature of tuberculosis should be recompensed most generously. In these days virtue is not always regarded as its own reward. Therefore, as said before, an investigation of impartial experts should be able to show if the claims made for the Spahlinger treatment are genuine or to show what the merits, if any, of the treatment are. In the pursuit of this knowledge, money raised will be well spent.

The Management of Certain Nose and Throat Disorders in Singers and Speakers.—Today when the radio is making it

possible for a constantly increasing number of singers to get a hearing, the desirability of a closer cooperation of singing teachers and laryngologists, as Dr. Voorhees has so long and earnestly advocated, is becoming more and more apparent. He quite properly maintains in a very valuable paper read before the Section on Rhinology and Laryngology of the New York Academy of Medicine, that many singers fail, or fall far short of what they might have achieved because of physical disabilities which ought to have been recognized before beginning study. It is, moreover, a common experience he says, to be consulted by pupil singers who, after two years of work, are sent in by the teacher because they have ceased to progress. Examination will often show chronic sinusitis, tonsils and adenoids, polyps, laryngeal growths, etc. If an operation is carried out, the new order of things requires a re-adjustment which means an entirely new start for the singer. The author states that voice production is composed of three factors, *viz.*, the motive power element, the laryngeal or vibratory element, and the resonating element. After considering these in brief, he describes various conditions which affect these elements adversely. One ought not to allow patients to sing or make public speeches when they are afflicted with colds, for permanent vocal strain may ensue. The upper airways are even more subject to local infections than the lower, altho most people regard a cold in the head as insignificant and try to sing with this disability, thereby laying the foundation for much future trouble. Vocal nodules sometimes result from this practice. Likewise, vocal weakness or phonasthenia.

The most aggravated conditions, according to Voorhees, are seen in vaudeville singers, who not infrequently, are people of talent, with little or no training. Their work is constant and fatiguing and they are ordinarily very careless of vocal hygiene.

Encephalitis Lethargica and Influenza.

—More than one disease, including foot and mouth disease in cattle, have been suggested to be a form of influenza. The most recent to be mentioned as belonging to the category is encephalitis lethargica or "sleepy sickness." It may be remembered that when encephalitis lethargica first broke out on a

somewhat wide scale in this country some five years ago, it was generally termed sleeping sickness, on account of extreme drowsiness being a main symptom, and was thus confounded with the true sleeping sickness. This disease is of African origin, the carrier of which is the tsetse fly, is greatly more fatal and to which term sleeping sickness is much more appropriate. "Sleepy sickness" is a suitable enough appellation for encephalitis lethargica. But to return to the relationship between influenza and the latter disease. The onset of "sleepy sickness" is in many cases insidious, and it may take a few days to two weeks ere the symptoms become sufficiently pronounced to allow of correct diagnosis. In other cases, however, the onset symptoms in general are rapid and similar in many respects to those of influenza. But it is the apparently coincidental occurrence of encephalitis and influenza of recent years which is the main reason for the view that one may be a form of the other disease. The medical correspondent of the *London Times* in the issue of March 15th last, further pointed out that they are both prevalent in London at the present time. Yet, as he went on to show, this phase of the subject will not bear close analysis. It will be found if the question be dived into more deeply that this relationship is not constant, as during the severe influenza outbreak of last year in England and in London in particular, "sleepy sickness" was conspicuous by its absence. Therefore, it would seem that either encephalitis lethargica is not a form or complication of influenza or it only occurs in connection with certain outbreaks. Also, it may be borne in mind that encephalitis lethargica was not first recognized until 1917 and if it were a form of influenza it appears reasonable to presume that it would have manifested itself sooner. The idea then that it is a form may be dismissed as now proven. With regard to encephalitis lethargica, it is the opinion of those who have had considerable experience with it that complete recovery, at any rate, in the case of children is rare. The intelligence of children who have had an attack seems to be distinctly impaired. This view is in keeping with the findings of the American Committee appointed to study the subject. These results are due probably to involvement of the cerebral hemispheres which may occur. The most common after-effects are,

as a rule, a general lack of physical and mental energy, but the prognosis as to how much permanent damage to the nervous system will eventually remain is hardly possible, since slow improvement may go on for months and even years. It may be said that in the treatment of this disease, the general signs being those of a general toxic infection, relief of the obstinate constipation which usually is a leading symptom is patently of the utmost importance. The employment of an effective intestinal disinfectant, and there are some nowadays, should be of much service. To revert again to influenza it is interesting to note that Dr. Brownlee, an English physician and statistician, stated some years ago that statistics appear to show a reappearance of influenza every thirty-three weeks. If Dr. Brownlee meant an epidemic of influenza, one surely does not follow another so quickly. True, like the poor, influenza seems to be always with us in these times, but not in epidemic form. The question is what was Dr. Brownlee's definition of an epidemic. It may be prevalent in sporadic outbreaks and yet not in epidemic form and, moreover, mild epidemics appear to be more frequent than was formerly the case, and yet surely not so frequent as Dr. Brownlee suggested. It may be that so much more is heard of disease, because population is thicker and more accurate records are kept. Or, again, another reason why influenza is being so constantly before the public is that many cases are diagnosed as influenza, which in former days would not have received this designation, on the principle, perhaps, that it is well to give the patient and his friends a label to his disease, and also to be on the safe side, that is both to protect the patient and the community from possible danger. There is further other reasons why influenza is more heard of than in the past. Inter-communication is more rapid and easy, witness the wireless, and because medical matters are much more widely and fully dealt with, not to say sensationaly, in the lay press than ever before, and this is, perhaps, the most potent reason of all. This is, perhaps, a morbid manifestation, but it certainly is true, that people like to read of diseases in their daily journals and especially of a disease which exhibits itself so rampanty and in so destructive a fashion as influenza does exhibit itself.

A Special Issue on High Blood-Pressure.—The greatest of medical problems confronting the physician today is that of high blood-pressure and its relation to sudden death. Recognizing the importance of this problem not only to every person who has reached forty years of age, but to every earnest practitioner of medicine, the Editors of AMERICAN MEDICINE have decided to devote the June issue to high blood-pressure in all its aspects. Articles from the leading physicians in this country and England, whose studies qualify them to write with authority on the subject, will appear in this special number. Presenting as it will the latest thought and researches on blood-pressure, the issue will unquestionably be the most noteworthy contribution to the subject thus far published. Our May issue will give a more detailed announcement of this great blood-pressure number.

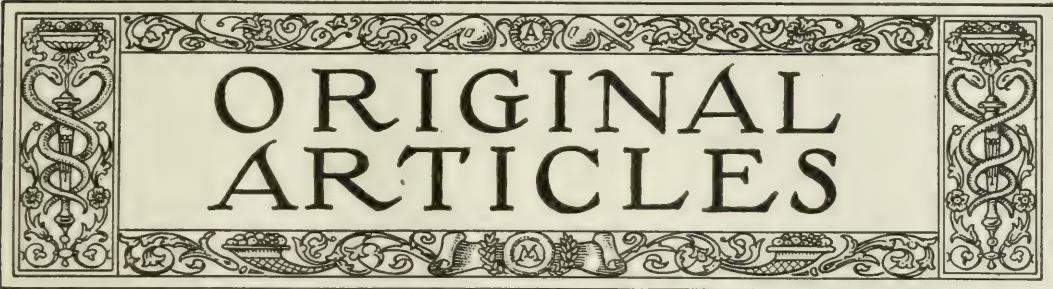
Medical Men.

To heal a wound, to kill disease,
To shield a life from pestilence;
To smoothe a frown, the heart to please,
To quiet agony intense,
Extinguish flames that fast consume
The house of man, and ease his thought,
To render life sacred, immune,
Are greater things than gods have
wrought.

So, as true artisans at toil
With stunted praise and small reward,
Shrink not from labor, nor recoil
From stubborn tasks accounted hard;
Tho arduous thy tasks accounted hard;
Without Appreciation's voice—
Toil on, ennobling faith thy fee,
Eternal service is thy choice.

Keep in the line, deal righteously:
With never failing courage make
Stronger the fight, humanity
Needs all thy strength, then nobly take
The weapons which our art requires
And with Wisdom's tender grace
Fulfill thine own heart's great desires.

—JAMES A. DE MOSS.



ORIGINAL ARTICLES

CRITICAL AND DESULTORY RE- MARKS IN THE LIGHT OF THE HISTORY OF ANCIENT MEDI- CINE.¹

BY

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XXIII.

Threatened with consumption, as the popular manner of speech still runs, Cicero may have been in his youth, and the exercise of the voice in practicing for public speaking may have cured him. It is a species of physical exercise of which Celsus thought highly and, tho we hear nothing of it now, indeed silence is enforced with surprising results in consumption of the larynx, it is just possible that chest expansion and the efficiency of its contraction in loud discourse in the open air, wherein the ancients lived, may have been beneficial. It might strengthen not only the muscles, but the body immunity to the lodging and the thriving of the tubercle bacillus. I am under the impression that in the last generation or two it has been occasionally advocated by writers on the hygiene of the tuberculous,

but it must be confessed it does not fall in very well with modern theories of immunity and infection. Men are robust because they frequent the open spaces of sky and unroofed stretches of mother earth. It very likely is true that there the tubercle bacilli doses are attenuated, both as to the number every man occasionally takes in and as to their virulence. I am not aware, however, that modern theories provide so plausibly for the acceptance of mere robustness as prophylaxis against tuberculosis in itself. The mere feeling of physical well being, thus attained, may contribute something on the psychologic side, vigor of digestion too on the bio-chemical side, but no one knows what the systemic factor is, except that it is the chief factor in dangerous infection with the tubercule bacillus. To speak of "predisposition" is to play the game of the cat chasing its tail.

Quite as mysterious are those functional neuroses which play a large part in the gastro-intestinal discomforts of high strung and overworked, at least overwrought men like Cicero, for in previous sections we have lingered over mention of these in letters to his friends. As to these he must have found little to satisfy any curiosity he had on the subject in the medical theories prevalent in his time, less perhaps than we with our bacterial and bio-chemical knowledge, but the crucial point is still hidden from us.

¹ For former sections of this series of papers see the *Medical Record*, November 26, 1921; February 24, 1922; April 15, 1922, and AMERICAN MEDICINE, November, 1922. In this paper the citations from Cicero are from the Leipzig edition of Cicero, 1890, by C. F. W. Mueller. *M. Tullii Ciceronis Scripta quae manserunt omnia.*

What is there in the anatomy and physiology of one man which allows him to dispose effectively and safely of a larger dose of tubercle bacilli or of a larger slice of pork satisfactorily than the anatomico-physiologic machinery of another man? We put it in these modern terms of our science. It is true, but that is as much a mystery to us still as it was to Cicero. We have lifted a corner of the veil of ignorance here and there in two thousand years, but the mystery remains. Who knows what he means when he speaks of temperament, of predisposition, even essentially of immunity, in terms of material science?

XXIV.

Now these are old questions to us, worn threadbare, the commonplaces of medical discussions. They have always been so, for they are intimately bound up with the mystery of life itself, which has always been a wonder to man. Each decade they have been discussed from an ever varying standpoint as we swing around the spiral of advancing knowledge in the analysis of thought. Exhausted as we are by the long continued discourse from a generation steeped in bacteriology, which once went so far as to insist there is no such thing as predisposition and temperament and to prove it, substituted new names for them still abiding with us, we must realize that is our mental background in medicine. It was a different background for Cicero when he grew garrulous about the health infirmities of his youth and joked about his dyspepsias. In his discourse on the "Nature of the Gods" we find at once it is a background whose color tone is tempered by the lights and shades, by the theories of the pneuma and of the humors, tho it is well to recall that

we are two hundred years before the birth of Galen, who so intensified the tints of the latter that they threw their shadows over medical thought for fifty generations more, but the theory of the pneuma was never thus blasted by the breath of fanaticism and exaggeration in science, and in Cicero's day even the humoral theory was attractive.

"The air tube belongs to the lungs because it receives the breath of life (*anima*), that which is impelled by the pneuma (*spiritus*) and this is inspired and expired by the lungs, protected by a kind of lid, which is there for that purpose lest if any food should enter, the pneuma might be obstructed."¹

We note in his use of the two words (*anima* and *spiritus*) that the breath was not alone the air which passed in and out, but with it was the pneuma, the mystic influence which it carried with it, the force that made the arteries throb, a part of the spirit of the universe carried in to animate the frame of man. We need not ponder so very long over this to bring it in line with the oxygen of the air, but I will not stop to point out in modern phraseology how, in this thought, he was exactly as near and exactly as far from comprehending the nature of God as we are—call it the nature of Life, if you will, you will not thereby escape from the essential pantheism of Cicero's thought or the pantheism of modern science, when it is driven into a corner and asked what its religion is.

There are few turns of human thought which Cicero did not embody in a witticism, but some of his jokes are not so deep-reaching as the one which fits in with this attitude towards the mystery of life. "Breath is given a hog instead of salt—so that he may not rot."²

XXV.

Standing alone, this joke in another work of Cicero might lead us astray to the thought that Cicero confounded the air itself with the divine principle, as did some of the early Greek thinkers, but when we return to the "Nature of the Gods" and read on a little further (55) we find him repeating the *pneuma* (*spiritus*) drives the air into the lungs and the air "first grows warm from the *pneuma* itself, then from its contact with the lungs and from here a part of it is returned in the expiration and part of it is taken to itself by a certain compartment of the heart, which they call the ventricle of the heart, to which another like it is joined and into which blood from the liver flows thru the vena cava." There we get the two, side by side, the ethereal food of the body supplied by the *pneuma* and the material food of the body carried thither from the digestive organs, for (54) just as it is "the nature of the belly lying beneath the stomach to be the receptacle of food and drink, so the lungs and the heart, on their part, bring in *pneuma* from the outside." It is not the lungs especially where the interchange of gases, or rather it is not there chiefly where the oxygen—I mean the *pneuma*—is fed to the blood, rather it is the heart, but that is not the thought prominent in Cicero's mind here obsessed with the conception of the air as food. The *pneuma* goes out with the air in the arteries to the belly and "in the belly many things are wonderfully wrought out, for out of three things the life of living beings is composed, food, drink and *pneuma*." The air and the *pneuma* with it no less than the food and the drink serve as aliment of living things. "The secretion in the intestines from the rest of the food, that part of it by which we are nourished,"

reaches the liver where what belongs to it remains. When the other part of the food, after the bile and the humors have been derived from it, is turned into blood, it flows out thru the gates of the liver, where all ways meet, and so thru the vena cava to the heart and from there it is distributed thru the veins to the whole of the body. We may stop for a moment to observe that to suppose any mental processes possible in dealing with the physiology of animals at all, which had not as an asset the knowledge that the blood circulates, is simply to make one's self ridiculous, but how and where and thru what channels and propelled by what force neither Galen nor forty generations of researchers after him exactly comprehended.

In it we see, in Cicero's thought, the *pneuma* and the humors mixed together, just as he looked on the mixture of the *pneuma* and the air in the breath. "They go to the heart compounded and concocted and so pass thru it." That the compounding and concocting played as prominent a part in the minds of men during Cicero's day as the bio-chemical processes of animal metabolism do today in modern thought is very evident indeed, and to this I have referred elsewhere. Here, however, I have simply wished to show against what a background of fact and theory the best thought in literature then was shadowed forth when incidentally dealing with medical matters. Physiologically speaking, the conception in general terms, it may be seen, is remarkably accurate, and his exposition of the doctrines of the *pneuma* and the humors is the product of a sane and disciplined mind and it was from this basis he contemplated the mysteries of temperament and predisposition, when he alluded to his own derange-

ments of health, which he usually speaks of in a spirit of jocosity.

XXVI.

The spirit of jocosity prevails still when the lay philosopher dips into medicine occasionally, but its problems cannot now be dealt with by him as a part of the philosophical scheme of the nature of the gods, but Cicero uses them in all earnestness. They have become too involved and perplexing for practical use in current cosmology. So numerous are they—the errors of observation too are so numerous—that the foothold for the philosopher is slippery indeed, the sands constantly shifting, old landmarks disappearing and new ones, probably quite as fallacious, constantly appearing above the horizon. Truth is a mirage that constantly eludes us. It is more difficult in our day to point out, as Cicero did and still more as Galen did, the glory of God as manifested in the structure and function of the framework of animal life. The old supports are so quickly snatched away and others so rudely thrust in on us that philosophy is in decadence. Agility never was a prominent character of it.

In spite of "the wonderful things wrought out in the belly," in spite of the wonders that are multiplied unto us still from that source, there is not a suggestion that the mysteries which the pneuma mixed with the humors, as well as with the air, are complex and some of them insoluble. As for us, we hug the statistical average to our bosoms, but we have no explanation of why one man's food is another man's poison, why one man does his work on contemptibly few calories and another fails at his job on plenty of them, and that is what the individual man really wants to know. He does not personally care a hang for the average.

Problems such as these very likely had not arisen in Cicero's day, but as to the mysteries with which they are closely allied no suggestion ever arose from the humoral theory as it existed in his day any more than from it as it exists in our day. From the pneuma he dropped into mere mysticism and that in one form or other, in an ever-varying verbiage, has always been the refuge, nowhere so frequently needed as in the science of life itself—in biology. It is, however, an instinct of the ages which turns men ever to it, when baffled and disappointed by materialism and we are seeing illustrations of that instinctive tendency today. We see how Cicero slipped on anatomical error in trumpeting the marvels the gods had wondrously wrought in the anatomy and physiology of man. The bones he passes over and focuses his attention on their articulations (55-6).

"Here consider the nerves (*nervos*) by which the joints are controlled and the part they play in the whole body, like the veins and the arteries derived from the heart and distributed everywhere"—the old Aristotelian anatomy. Alcmæon, five hundred years before, had traced their origin to the brain, but it was largely by the help of Galen, two hundred years later, that the nerves began to be, or at least were by him, more clearly differentiated from the tendons and aponeuroses, but even he could not get away entirely from the idea their action was a mechanical one. Cicero was using the anatomical and physiologic knowledge of his day to chant the glory of God, but we can never perceive how much of the talk of the interlocutors of the dialogue Cicero himself really took stock in, none of it with any earnestness because he was superficial as well as skeptical, but all the more thereby has he historical value for us.

"To this provision of nature, so carefully and so skillfully arranged, many things may be added from which it may be known how many and how great are the gifts of the gods to men." Then follows the sentence which found an echo in the puerilities of the philosophy of the schoolmen more than fifteen hundred years later. It was derived from Cicero and he derived his inspiration from the science of Aristotle—all the nerves—the nerves, the tendons, the aponeuroses, springing with the blood-vessels from the heart, the center of life, situated in the center of the body.

"These first allowed men to stand lofty and erect on the earth, so that they might get a knowledge of the gods by looking up to Heaven." Then avoiding an error of conception which must have still widely prevailed in his day—that the center of thought like the center of life was located in the heart, he glides into the religious philosophy of his day—he sets it forth, not as vouching for it himself—he who reported that the haruspices could scarcely avoid smiling when they met—he says, "Men are not simply tillers of the earth and dwellers there, they are the spectators, as it were, of things high as Heaven itself, a view which has been granted to no other kind of animal." It is in the head, he declares, the senses find a receptacle and a laboratory for what they bring there, Alcmæon's doctrine. The following is the idea which captivated the monks—until man's eyes could look up, how could he collect celestial data?

XXVII.

In the return of the paroxysms of malarial fever as it was known to the inhabitants of the basin of the Mediterranean, there may be found a periodicity which doubtless lay, of course with much else, at the bottom

of the Pythagorean idea of days, odd and even days, the seventh day and no doubt some notions as to the influence of the moon in this connection on the rise and course of fevers. The high and low tides, moderate tho they were there, their monthly and yearly recurrence, the daily throbbing of the tide, tho sensible only at the end of long inlets, were the subject of speculation, and in this not infrequently the phenomenon was likened to the exacerbations and remissions of what were, we may suppose, the various forms of malarial and other fevers. In addition to the background furnished to Cicero and his friends by the marvelous acumen of the minds of Hippocratic Greece before their theoretic structure became grotesque under the influence of the writings of Galen, we get a certain trace of this idea of the ebb and flow, of the periodicity of disease. There was much discussion among the shadowy spokesmen in the dialogue on the "Nature of the Gods," whether such phenomena should be called divine or whether they should be ascribed to Nature, whether the two terms are the same in meaning, or at least coterminous.

"Those things which are called gods are natural phenomena, not the simulacra of gods—that at least is a common opinion. So great is this error that not only the names of the gods are given to things, but these are actually held sacred. On the Palatine there is a shrine of Fever."³

But it had become plain at this stage of the discussion, evidently out of pure caution on the part of Cicero, that a retreat must be made to the politic position which had been taken up by Hippocrates in the still famous phrase that puts pantheism in a nutshell, and draws the veil of conventional piety over the whole thorny and dangerous question. No disease, no one thing in

nature is more divine than another, all are of God. This was stretching the Hippocratic phrase a little and perhaps it was no improvement of the laconic brevity of the original. Disease only was there referred to—but the rest follows spontaneously in any one's thought. Pantheism is the white flag of science which we still wave before the menaces of mankind. All things are divine, one not less than another.

"Not all things alone, my dear Balbus, whose action is steady and uniform, are to be attributed any more to God than to Nature. In the reciprocation of motion, what do you think can be more regular than that narrow channel, the Chalcidian Euripus, or the Sicilian Straits or than the energy of old Ocean in those places

'Where the gnawing wave parts Libya
and Europe?'

Is it possible you can think the tides of the sea, whether around Spain or Britain, in their rise and fall can occur without the intervention of God? Consider, I beseech you, if we do not call divine every motion and all things which maintain a certain rhythm—if it is not said certain fevers and quartans are divine, than whose come-and-go action what can be more regular? Of all these things some explanation must be returned. When you cannot do this you take refuge at an altar with a god."⁴

XXVIII.

There was no lack of historical records and legends abounded in support of this assertion. Reference is made⁵ to Thoth in Egypt as the prototype of Æsculapius. As for Æsculapius, there were many of them, all of them claiming clanship with the gods.

"Of the Æsculapii there was first the son of Apollo, whom the Arcadians worship, who was said first to have found the probe

and to have bound the wounds of men. The second was the brother of the second Mercury, who has been mentioned as the son of Coronis, by whom in one legend Apollo begat Æsculapius. This one was struck by lightning and was buried, it was said, by the Cynosuri. The third Æsculapius was the son of Arsippus and Arsinoe, but Arsinoe is also said to have born him to Apollo, instead of his mother having been Coronis. He first, they say, began to purge people and draw their teeth, and his tomb and sacred grove are shown in Arcadia not far from the river Lusius."

The purges they used then, hellebore for instance, were occasionally given in unexpectedly fatal doses and from some scenes reproduced in modern plates from ancient artists it seems likely jaws were occasionally broken, and then an altar was a handy thing to have in the family to cling to.

The gods thus supplied a refuge for their priests active in the service of humanity. Religion, the sacerdotal hierarchy, then, were the sole beneficiaries. The rewards came perhaps as much from the gratitude as from the superstitious fears of men. Now they have no monopoly of this sort of thing—all are in it, the Standard Oil, the Movie Films, Why enumerate all the agencies, which, for whatever motive, have acquiesced in the behests of modern civilization bidding the powerful of the earth to take up the burden of the temple priests? Religion and autocracy, however, in the long run found it was inconvenient and hazardous for it to stand responsible for those who stumble so often in the paths of righteousness, as full of pitfalls then as now. Mistakes were costly in the loss of prestige for the priesthood and in the contempt for the rulers, and we cannot doubt this awkwardness of the

situation, which commercial philanthropy in our day too will yet be called on to face, had as much to do as anything with the divorce, effected slowly thru the ages, between medicine and religion. This began in our civilization with the breaking up of the Ancient City in Greece, an epoch antedating the Peloponnesian War; a story traced for a former generation of Frenchmen by de Coulanges. We infer that Cicero's thought was that the priests took the stand that tho the gods gave understanding, the divine light of reason, to man, his frequent misuse of it made it a doubtful blessing; at least he has one of his disputants argue in this strain.⁶ I am glad to refer to it because it illustrates this ancient and essentially religious feeling that an all-knowing and an all-powerful God cannot tolerate human error, when the human being acts in His stead. We get, too, a glimpse of an opinion on the medical use of alcoholic stimulants, which is quite apropos of present-day interests.

"Just as wine, because it rarely helps and most frequently injures patients, ought rather not be administered at all than that it should, in the doubtful hope of restoring health, run into plain injury to it, so I do not know if it would not have been better for humanity if the quickness of perception, the acuteness of judgment, the adroitness of mind, which we call reason, since it is most pestiferous to many and of use only to a few, should not have been given at all rather than to have been given so lavishly and so widely." He has no use for wine in disease and he mourns because of the oppression of supermen. I am sure both of these are prepossessions which still dwell in our minds. As to the misuse of splendid mental gifts, Goethe puts the well-known plaint in the mouth of Mephistopheles, pointing out to the Herr Gott what a miserable creature He had made of man:

*Ein wenig besser würd' er leben
Hättst du ihm nicht den Schein des Himmelslicht gegeben,
Er nennt's Vernunft und braucht's allein
Nur thierischer als jedes Thier zu sein.*

In reality, however, Cicero's circle was pretty well emancipated from superstition in our regard. One of them may be found⁷ expressing the opinion that it is by Hippocrates, the man, rather than by Æsculapius, the god, that most men are cured, an opinion, however, which we might analyze in the light of the knowledge we have always had of the *Vis Medicatrix Naturæ*.

XXIX.

The two citations, which I have above brought in apposition, in pregnant criticism of the evil tendencies implanted with the intellect in the nature of the descendants of Adam, are so exact in the correspondence of the matter that the thought can scarcely fail to come to us that the German bard was inspired by the lucidity of Cicero's diction, but it is so utterly apart in form that we seek a solution in the supposition that both these supreme masters of literary form got their thought from the same source. That this source was wrapt up in the Greek symbolism which permeates the legend of Prometheus who stole the fire, *den Schein des Himmelslicht* from Heaven is all but certain. The familiarity of both great artists with the Greek tragedies, their confession, the later one quite independently of the earlier, that they had shaped even their form on Greek models, the fact that the Prometheus of Goethe was but a prelude to his Faust and his Iphigenia but a copy of the motif of Euripides, renders it certain that the masterpieces of these men were rivulets isolated from one another everywhere except at their source. That was one

in common with modern medicine and philosophy, the tiny territorial land stretches of Greece and the little dots of islands, barely perceptible on the map of the world, Athens which drove Euripides out into the world and Cos which sheltered Hippocrates. I take it Cicero had in mind the Greek tragic writers, despite the fact his *de Natura Deorum* is modelled after the dialogues of Plato, because in the latter no one of them, so far as I remember, brings this idea into prominence.

In what I have had to say of Galen I have intimated that the degeneration in the fibre of thought, as we have it in Cicero, the top flower of Roman culture, is easily recognizable and that it is still more evident in the comparison of Galen with Hippocrates. Indeed, Galen's all but abject slavishness to his great predecessor is a tacit testimony to this deterioration, but Cicero acknowledges it, he who has the less reason, frankly*

**Namque horum posteri meliores illi* (Greek philosophers after Plato and Aristotle) *quidem*

pointing out that it began with the decline of the political power of Greece and tracing its miserable trail thereafter up to the feeble representation in the Rome of his youth. It was the Pythian Apollo, he says, who told us "know yourselves," but there is added a grace to the knowledge of inferiority by its generous acknowledgment in the pages of Cicero, while Galen mutters it *sotto voce* and denies all excellence after Hippocrates but his own, and perhaps found comfort in the thought that the Master, born in Cos belonged, not to the hated Athenians, but to Asiatic Greece.

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mē sententiā quam reliquarum philosophi disciplinarum, sed ita degenerant, ut ipsi ex senati esse videantur. De fin. bon. et. mal. V. 5.



THE LARGER CONCEPTION OF MEDICAL PRACTICE.

The apotheosis of pure science must give way to the larger conception of the conscientious care of the sick, and science for science's sake assume its most important but proper place. Evaluate pure science fairly, evaluate research sanely, and emphasize the skilful management of the sick individual. Teach those principles calculated to relieve human suffering. Stress the service side of the physician's job. Modern medicine must be the applications of science at the bedside—science so applied that every factor tending to restore the individual to a normal regimen of life shall be utilized. Science is the armament of the physician; and his skill in the use of this armament in overcoming disease reflects his training and his attitude toward his fellow man. Medicine must maintain its superstructure of service as its foundation of science. "Knowledge is proud that he knows so much. Wisdom is humble that he knows no more."—Dr. I. S. Cutler in his address before the Annual Congress on Medical Education (Jour. A. M. A., April 7, 1923).

MORE ABOUT THE PREVENTION OF PUERPERAL FEVER AND SOMETHING ABOUT ITS SU- CESSFUL TREATMENT.¹

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We are all taught the antiseptic requirements of childbed. They concern the physician, the nurse, the patient and the instruments, utensils and other special appliances of the lying-in-chamber that may be brought in contact with the field of obstetric manipulation. They are so exacting and so frequently forced upon our attention by all writers and teachers of obstetrics that it would seem a waste of time for me to make more than this mention of them.

These requirements which prevail in institutions where there is almost absolute control, with a reliable financial basis of operations and provided with everything necessary for the systematic and thorough prosecution of the work, are no doubt useful and apparently have lessened the accident of puerperal infection. Where such measures are of recognized utility, it is not only well but right that they should have full and free employment. It is, however, none the less truer that circumstances alter treatment than that "circumstances alter cases." The strongest friends of asepsis in midwifery must admit that the measures they advocate are practically impossible outside of fully equipped institutions. But textbooks, if you reflect, make no concessions. They leave us no alternative. We must use these precautions everywhere and on all occasions. If we do use them and our patient becomes infected, we are told that our

technic was imperfect. If we do not use them, we are charged with "criminal negligence" whether or not our patient becomes infected and, this, too, in the face of the fact that aseptic measures in the best conducted lying-in institutions only cut down mortality and morbidity.

Simple means and means more in reach of the general practitioner in every-day practice is what is needed. The problem, so far as we in general practice are concerned, cannot be settled by the present-day teaching of the text-books. It cannot be settled right until the forces which bring the settlement about come from the active, intelligent and effective interest of the men who do the practical obstetrical work in the country. The solution of the problem must come from within and not from without the ranks of the general practitioner—in other words, it must come from the men who are actually concerned.

The principles underlying success in obstetrical work are not only to exclude bacteria but to admit them in as small numbers as possible and at the same time to place the system under as favorable circumstances as possible to destroy them should they enter. Obstetricians lay chief stress on the exclusion of bacteria rather than on keeping up the natural and adequate resistance of the body, and the results in well-conducted institutions are encouraging. But unless these methods are intelligently and vigorously employed, bacteria may enter. In fact, we are told by those in charge of the best lying-in institutions that pathogenic bacteria do enter under the strictest efforts at asepsis; and that while the death-rate from this cause in modern lying-in hospitals have been reduced to a fraction of one per cent., that many patients go out from these hospitals with

¹ Read before the meeting of the Tri-State Medical Association of the Carolinas and Virginia, at Greensboro, N. C.

"permanent serious injury to the pelvic organs."

We cannot rid ourselves of the proposition that if we would have healthy mothers after childbirth, we must prevent post-labor infection; and the converse of this is true—that if we would prevent post-labor infection, we must have healthy mothers.

The time may come when the immunity acquired by antiseptic precautions may prevail universally, but that is simply to delay immunity to many years in the future—left until the people at large are educated to the necessity and advantage of such efforts at staying off bacterial disease. Even then I cannot conceive how it would be possible to carry such measures to the point of immunity. The problem which naturally interests the general practitioner is how to reach immunity in such cases now.

As a matter of business, physicians should distinguish between therapeutic improvements which can only be put to practical use in institutions run by ample capital, and which consequently will be of comparatively limited scope of employment, and those measures which may be classed in the category of universal usefulness. The busy practitioner, especially in the remote sections, wants something that he can use at the bedside and every bedside—in the hovels of the poor, as well as in the homes of the rich. In the rural districts, isolation, limited education and poverty demand simple and inexpensive therapeutic measures. While this is true and a necessity in dealing with the major portion of our patients, both in the country and in the city, if these simple and inexpensive therapeutic measures can be applied with success and without the aid of the better resources advocated by authorities, then why would not the few more fortunate patients who have the bene-

fit of the best be still better off, if, in their cases also, the best were aided by the simple and inexpensive measures which are commonly successful when used alone?

The antiseptic requirements enjoined by obstetricians, while they cut down, do not reduce the cases of puerperal fever to the lowest minimum desired, nor to the minimum that has been reached by other measures—by simple measures and measures entirely within reach of the general practitioner in every-day practice. The promulgation of these practical measures in no way conflicts with or antagonizes the antiseptic hardships enjoined, and it is not intended that they should do so. As a matter of fact, they actually serve to round-up the triumphs of the distinguished obstetricians who have done so much to lessen the risks of lying-in women.

A long, if not a large, experience with my prophylactic methods, leaves little to be desired as to favorable results obtained and I prefer not to abandon a tried and successful method and one so easy of accomplishment for one possessing less advantages of administration and which has not attained to the same percentage of efficiency under like disadvantageous conditions. Tho this method is not the popular one at the present time, yet, I feel confident that further experience with it will cause a reaction in its favor.

The natural physical power of a healthy woman is itself unerringly competent to protect her from infection. This is commonly or always true. It is markedly true in regard to infectious diseases in general and, according to my observation and experience, it is absolutely clinically true of the post-labor sequel under discussion. A woman in a normal state of health will go thru a normal labor without any danger whatsoever

of infection and will show no evidence of infection even after manual manipulation or surgical intervention and, this, too, whether or not aseptic and antiseptic precautions are instituted. Practically we country physicians are almost shut out from the benefits of aseptic and antiseptic practices of the present-day lying-in hospitals. Success, then, in our field of operations, must be sought for in other lines than the one laid down in the emphatic injunction of the text-books. Here, as in other emergencies, we are driven to call upon the storehouse of necessity and draw latent resources into active use.

I have attended twelve hundred full-term labors and enough abortions, immature and premature ones, to aggregate fourteen hundred cases, and I have had only one case of infection—no deaths and no morbidity.

The case I had (1887) is well, with not even so much as a show of leucorrhea to tell the tale. No patient that I have attended has been called upon to seek the services of a gynecologist. With this record to look back to, why should I do otherwise than I have done in the past?

My first paper on the "Preventive Treatment of Puerperal Fever," published several years ago, initiated this view:

- (1) That filth does not cause puerperal infection.
- (2) That the toxic microorganisms which cause puerperal fever are innocuous in healthy blood.
- (3) That pathogenic bacteria do not enter the normally contracted uterus.
- (4) That the determining factor of puerperal fever rests within the woman herself.
- (5) That a healthy woman will go thru her puerperium without risk of infection.
- (6) That functional and organic diseases, uterine disturbances, hemorrhage, etc., before, during and after labor, working alone or together, constitute a sufficient

cause of uterine incompetence and, therefore, active factors in determining infection.

(7) That the rational prevention of puerperal fever looks to the removal of all those causes, local, organic or systemic, which disturb the normal function of the uterus and interfere with its proper contraction and retraction after childbirth.

The rational prevention of puerperal fever is best considered under two heads:

- (1) Ante-parturient prevention; and
- (2) Post-parturient prevention.

Ante-Parturient Prevention.—I dissent from the teaching of the text-books that puerperal fever is always the result of violation of aseptic and antiseptic doctrines. Puerperal fever may be the result of multiple factors, of which filth is only one, but in my opinion it is not the determining one. The determining factor of puerperal fever rests within the patient herself—interfering with the active process concerned in the destruction and renovation of tissue, upon which depends bodily and mental strength. Maintain or restore to her general functional integrity, and post-labor infection will never disturb the safety of her puerperium. Filth principally affects the esthetic sense—it is not dangerous to the healthy parturient woman. Bacteria flourish more easily in a weakened system and vital resistance is perhaps after all the chief factor in determining whether or not infection will follow childbirth. Rational prevention, then, in its broadest sense involves individual prophylaxis. The pregnant woman should have the watchful care of the physician from the moment of conception.

Resistance—nature's capable way of granting immunity from infection—when up to the standard, repels; when below, invites infection. Habit, environment and heredity add to or detract from it. Patients differ in this essential individuating principle.

ple. Resistance is as distinctive a characteristic of each patient as is the external aspect which distinguishes one person or family of persons from another. How best to accomplish this mission of ours, is the question. Asepsis and antisepsis and serum-therapy of the present day do not answer it. The solution is not a delegated power, nor, indeed, can be; it is a personal endowment, accentuated by dint of hard work and trained observation. The solution resides in the faithful application to each patient of the attending physician's acumen and knowledge. Our duty as physicians cannot be ignored here any more than it can be disregarded elsewhere by those who are responsible for the welfare of others. In order to ameliorate or eradicate the evil influence of habit, environment and heredity upon the pregnant woman, the physician should be able to recognize functional derangements, organic changes and incipient degenerative phenomena. This involves not only an accurate acquaintance with pathologic and physiologic processes at work, but also a well-grounded insight into the action, in health and in disease, of the therapeutic measures called into play. Nothing can supersede the knowledge which experience brings in the proper choice of means to meet disturbing conditions. In short, the physician should study and treat the case in hand and remember that no case can be considered alone. It is always in relation to variant cases. This implies trained observation and the grasping of case histories. Case histories edge the judgment. The whetted judgment, urged to action by a personal interest in each patient, ensures healthier mothers, and healthy mothers, other things being equal, bear stronger children. This is not alone the case in connection with puerperal fever; it applies as

well to tuberculosis and other undermining forces which threaten to disturb health. Now, then, it does seem to me, that we should be able to realize how individual prophylaxis can do good not only at the bedside of the lying-in woman, but if persistently and intelligently pursued, can also constitute an endless chain of good for the well-being of future generations. It is by such reasoning that we see the purposes and objects of individual prophylaxis justified in their immediate and remote results. The limits of this paper forbid an elaboration of the subject. The exact measure of worth of individual prophylaxis is based upon my fourteen hundred cases of labor without a fatality.

Post-Parturient Prevention.—Ante-parturient prophylaxis in its entirety is, for obvious reasons, limited to a certain class of patients—principally to those among the more intelligent and better-to-do classes. To meet the needs of those who do not and who cannot afford the more or less cost of ante-parturient prophylaxis, and that other class who thrust their cases upon us suddenly and without previous knowledge of their condition, we are brought to face an exigency that admits of no shirking. Here, as in the cases which come under the physician's care early in pregnancy, trained observation and experience will point out those who require special direction or more tangible therapeutic aid during labor, as well as those who will need my blocking and postural measures after the child is born.

The success of all precautionary measures in private practice depends very largely upon their simplicity. The numerous details of a complex the better method are generally a barrier to its efficiency. We see this demonstrated in hospital work. The simplest way is the best way, if the simplest

way works the best results. Another marked advantage of my blocking and postural method is its ready compatibility with all other means and remedies indicated. The blocking and postural method may have its failures, but I am confident that they will not be so many as would be seen by the maternity treatment adopted (rather imitated) in general practice.

Ergot and posture have faithfully served me in many emergencies—after craniotomy, placenta previa, eclampsia—in fact, after any disturbing influence which tends to bring about uterine insufficiency. A patulous uterus from whatever cause furnishes a favorable entrance to and constitutes a proper fluid environment for pathogenic microorganism. The formal indication in each and every pathologic condition attending labor is ergot and posture, with intelligent attention to coincident symptomatic indications. Thus in the absence of normal physical strength, strychnine should be called into play as an appropriate adjuvant, as it possesses the power of restraining exaggerated excitability and arousing dormant activities.

The management of the third stage of labor is important. We are told not to leave fragments of the placenta, membranes, etc., in the womb. This applies as well to premature or to full term labors. A clean uterus is less likely to favor hemorrhage, infection, or the more permanent post-labor accidents. Forceful expression of the after-birth borders on danger—learn to wait. Undue haste may lead to trouble. Personally I prefer the finger where artificial procedure is indicated. When I cannot get the retained fragments with the finger, I leave the result to internal medication and time. Of course we want definite results but we should get definite results in the easiest and

safest way to the patient. I have never thought that the placenta forceps could compare with the finger. The curette, in the hands of the expert, may clear the womb, but even then how can one feel assured that all the retained material is away and how can one know whether or not he has not done damage to the uterine mucosa or body? Dr. J. B. Deaver and other physicians of extended experience caution against the use of the curette. To reach the degree of touch-sense necessary to curette without danger, must necessarily carry much harm to the women who are used to reach the harmless point of experience. Ergot removes the retained or adherent material with ease and safety. I have known ergot to clear the womb after the curette had failed. Ergot properly administered, will remove all débris after full-term labors, and it will remove the placenta and membranes after premature births; slowly to be sure, but thoroly and without hurt to the lying-in woman. This has been demonstrated over and over again in my own practice and in that of other physicians.

In a word, endeavor to correct the slightest evidence of deterioration in the status of the lying-in woman. Aim to make her as comfortable as possible, both by day and by night. See to the emunctories. Try to allay nervousness, calm excitement, control pain, promote sleep, and by so doing guard the defenses of the body. Fresh air in the lying-in room is essential. Maintain thorough ventilation. After labor, watch the uterus and guard against hemorrhage; look for and repair lacerations; give the mother the quickest comfort compatible with safety and put the baby to the breast. Then let her change her position at will and move from one side of the bed to the other as often as she desires. Unless absolutely contrain-

on the vessel as often as necessary. Sitting dicated have her get out of bed and sit on the vessel insures free and thoro drainage of the uterus and vagina, an essential factor in the prevention of puerperal fever. I have purposely omitted mention of chloroform, saline infusion, vaginal and other irrigations, use of serviettes, etc.—reference is made to former papers.

Ergot¹ should be given in from 10 (.60 c. c.) to 15 (1.00 c. c.) drop doses three times a day for from three to eight weeks. The object is to give just enough to make the patient conscious of slight pain or of a noticeable bearing-down feeling, whether the dose is only one (.06 c. c.) or as many as 60 (4.00 c. c.) drops, but 5 (.030 c. c.) to 15 (1.00 c. c.) drops are generally sufficient.

The beneficial effects of ergot are not limited to the duration of the disturbing influence—they continue after the patient has emerged from the lying-in chamber. The lumen of the blood-vessels is lessened, circulation facilitated, while metabolism is stimulated by the compression exerted upon the uterine vessels and tissues. This favors a quicker and better involution. The womb weakened by previous disturbing influences could not, unaided, possibly resume anything like its normal size.

The three points which may be considered as especially advantageous in the blocking and postural method are:

- (1) Efficiency,
- (2) Availability,
- (3) Cheapness.

There is every reason for believing that ergot affords an almost perfect protective influence against puerperal infection.

¹ Ergotin (Bonjean) action almost identical with fluid extract of ergot.

Something About the Successful Treatment of Puerperal Fever.—Several years ago I called attention to the clinical fact that ergot held first rank as a remedy in puerperal fever. Subsequent experience has still further strengthened my confidence in its therapeutic efficacy in such cases. A proper conception of the value of ergot in puerperal fever is perhaps best brought out by reports of case histories.

I am indebted to Dr. Sam. W. Maphis, Warrenton, Va., for the following abbreviated notes of the records of two cases in which ergot was employed in his practice thru my suggestion:

Case 1.—“October 13, 1903, M. T., mulatto, age 35, married 14 years, five children, no former miscarriages. Had not menstruated for four months. Present illness began with severe hemorrhage and pains, which continued with more or less severity for eleven days when I was called. Patient looked weak and poorly nourished; temp. 104° F., pulse 160, resp. 42, chills, sweats and tender over pelvic region. Pelvic organs tender. Examination revealed some dilation and mass protruding from os; fetid, offensive smell. Recommended the curette; was refused and could not remove mass with finger. Ordered fluid extract ergot and strychnine t. i. d., and hot antiseptic douche. Chills and sweats subsided, temperature reduced, pulse lessened. Saw patient on seventh day (18th day of illness) with Dr. Harnsberger. Her condition was generally good but mass remained. He advised, ‘let the mass alone and continue the ergot and she will recover in perfect shape; but to use manual force or instruments to remove the offending material, may, and is likely, to do her harm—leave it to nature, that is, time, assisted by ergot and she will come out fit for the future.’

“In five more days (23rd day of illness) the mass came away and her improvement was uninterrupted. In due course of time she gave birth to a healthy baby.”

Case 2.—“I was sent by our Board of Health to Upper Fauquier County to examine some suspected smallpox cases. When

about to return to Warrenton, I was asked by the physician in attendance to see a woman (full term labor) with puerperal fever and whose condition was considered desperate. They had curetted the uterus and used repeated antiseptic intra-uterine irrigations and the usual internal remedies but with no benefit. Of course, under the circumstances I did not think it prudent to see her, but I advised the trial of ergot as used by Dr. Harnsberger.

"In about ten days I had professional business in the same neighborhood. While there I met one of her physicians, who told me that she began to improve at once under the ergot and was then about well."

Conclusion.—I do not say that ergot destroys or devitalizes the toxic germs after they have set up systemic infection, but I do know, from a number of cases of puerperal fever treated successfully with ergot, that the remedy seems to act as a specific, and I am confident that further observation and experience with it in puerperal fever will demonstrate its efficient action and perhaps also establish its special antagonism to germ life.

The comfortable after-course of my lying-in patients, the absence of mortality and morbidity, and the permanent curative results of my blocking and postural treatment comprise its complete justification.

Science versus Nature.

Methuselah ate what he found on his plate
And never, as people do now,
Did he note the amount of the calorie
count—

He ate it because it was chow.
He wasn't disturbed, as at dinner he sat
Destroying a roast or a pie,
To think it was lacking in granular fat
Or a couple of vitamins shy.
He cheerfully chewed every species of food,
Untroubled by worries or fears
Lest his health might be hurt by some fancy
dessert,
And he lived over nine hundred years!

—*Prescriber.*

THE DISTRIBUTION AND THERAPEUTICS OF IODINE.

BY

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Iodine is the one element entering into the composition of the animal organism which may be defined as the mystery of physiologic chemistry. The distribution of iodine in nature has been the subject of discussion by numerous writers since its discovery. Its physiologic action has never been entirely solved to the satisfaction of all authorities, and its therapeutics have been somewhat empirical, even tho governed by conclusions drawn from observations and experiences of numerous clinicians from the days of Lugol and his associates to the present time. The discussion of iodine in this paper will be limited to its action as a necessary physiologic agent in the human economy.¹

Quoting Heinrich Ries, in "Economic Geology": "This element is known to occur in sea water, in mineral springs, and in a few rare minerals, such as iodides of silver, copper and lead. In the Chilean nitrate deposits it exists as lautarite $[Ca(10_3)_2]$ and as a double salt of calcium iodate and chronate $[Ca(10_3)_2, Ca Cr O_4]$. Some Silesian zinc ores and some of the phosphate rocks of France show small percentages of the element. It has been found in the ashes of sea-weeds, and in some of the oil-well waters, certain Pennsylvania ones carrying .5587 gram of calcium iodide per liter. At present the entire production of iodine comes from two sources, *viz.*, the

ashes of sea-weed and the niter deposits of Chile."

Iodine derives its name from the Greek word *indos*, signifying "violet-colored." It was first recognized as a separate substance about the beginning of the nineteenth century, but was not accepted as one of the elements until somewhat later; even Sir Humphrey Davy persisted in the belief that it was probably of a compound nature. Early experimenters were extremely interested in it because of its unusual properties of remaining in the solid state in the proper environment, and becoming a visible vapor with the use of a small amount of heat. Researches revealed its existence throughout nature within a few years after its discovery. Lugol² was the first man whose writings gave iodine a rational therapeutic status; his writings are of extreme interest as they clearly convey his recognition of one positive fact, that is, that successful iodine therapy is based upon the use of small doses, and that the method of administration is of considerable importance. From the writings of Lugol to 1878 there was a dearth of surviving literature on the subject of iodine except for three communications: Ryan³ in 1836, Socquet and Guillermond,⁴ 1854, Titon,⁵ 1854, and an abstract in the *Scientific American* of 1864 was discovered in an old scrap-book, which gave a very good conception of the general distribution of iodine, and states as follows: "The inhabitants of the Tyrol are subject to a very painful disease called goiter, or cretinism, for this malady iodine is a perfect cure."

The greatest storehouse for iodine is the sea, but to abstract it from sea-water requires the treatment of sea-weed or the evaporation of the salt and the treatment of the mother-liquor, after the crystallization of the salt from solution. The salts of

iodine are more soluble than the salts of chlorine, which property permits it to remain in solution longer than other chemicals in sea-water. Chile saltpeter contains much iodine and contributes a large amount to the commercial supply. The soils and rocks of practically the whole earth contain this element, but the solubility of its salts permits it to be washed below the surface of the soil with considerable rapidity. Having the same chemical properties as other halogens, it forms the same salts, and is most frequently combined with the alkaline bases. While the coast soils contain a large percentage of iodine, derived from the mists that float in from the ocean and fall upon the land, some territories in higher ground to provide sufficient iodine to meet the needs of the inhabitants, while other territories of equal altitude are almost entirely free of this element in the ground. It is probable that this will be proved to have some relation to the distribution of certain clays, which are found in very large proportions and in very thick strata formations in some of the highest altitudes, while other territories do not give evidence of any clay stratas near the surface.

The predominant opinion of various writers is that the higher percentage of goiter is found in limestone territories, and this is attributed to the porosity of the rock allowing water pollution. This cannot be accepted as an absolute rule in all regions containing lime deposits, for much territory in some of the Eastern Central States contains limestone strata rotating with the sandstone and gravel stratas. The solubility of the salts of iodine permits them to be washed from the top soils, but in territories with exposed rock and clay beds, the constant chemical disintegration which occurs under frost and sunlight liberates the contained

elements, efficiently supplying the soils with soluble salts.

Considerable emphasis has been placed upon the pollution of water, its freedom from contamination being of great importance in relation to iodine absorption. Robert McCarrison has written extensively on this phase.

The effects of iodine scarcity are most manifest in level countries, having deep loam soils which do not permit exposure of the rocks and clays to the weather. "Endocrinology and Metabolism" quotes Clarke and Pierce as follows: "A voluminous literature has established no clear connection between endemic goiter and water supply." The writer was brought up in a city which obtained its drinking water from the Ohio River during the period before the agitation which caused newspapers to keep the slogan "Boil the Water!" before the public all the time. The pollution of this stream by the cities from Pittsburgh down has been referred to in literature on hygiene and sanitation, but goiter was not uncommonly frequent in the towns and cities that used the water for drinking purposes—in fact, it was more infrequent than we see it today in the city of New York. The explanation of this may arise from the higher percentage of free iodine in the soils from which the inhabitants of this region received their vegetables and water supply. Numerous mineral springs occur in the hills and mountains draining into the Ohio valley, and a number of exceptionally fine saline springs are found in this region. Moreover, the pioneer families were unusually rugged and prolific.

Lime rocks and clays provide a relatively large proportion of the salts of calcium, potassium, sodium and lithium, principally in the form of a carbonate, but sufficient of the halogen group are present to provide a

good percentage in waters filtered thru these rocks and clays. Iodine may be defined as having a property in common with a number of other elements composing the animal organism, of rotating in a cycle, during each rotation entering into organic compounds which make up the animal and vegetable world, and then disintegrating and returning to its source, that is, Mother Earth, and her great subdivisions. Reference to this phase of iodine activity has been made by Hayhurst,⁶ Bourcet⁷ and Losseedat.⁸

There is an old saying among the observant ones that people in the habit of drinking water from melted snow acquire goiter, which would imply that the use of water free from the proper mineral salts as found in the springs and wells, whether this be melted snow water or our modern distilled water should be avoided. Boiling water does not destroy the inorganic constituents, but may precipitate them. The breaking of hard water by chemical methods and the resulting precipitates may reduce the proportion of chemical constituents and incidentally, reduce or increase one source of iodine supply depending on the character of the precipitate and the various elements liberated. As has been discussed by several writers, the importance of the iodine content in the water that we drink is considerable. The infinitesimal amount of iodine in the average water supplying cities, together with the lack of interest taken in this matter, has caused this phase of the desirability of selecting water supply with extreme care when furnishing large cities, to be ignored. Could we but direct the water from selected mineral springs into the cities' supplies, thruout the country, many of the delinquencies manifested in the health and well-being of city dwellers might be compensated for. As an illustration of the things that could

be accomplished in this direction, diverting some of the enormous wastage of such springs as are found in Saratoga and other sections of northern New York into the water supply of New York City could be cited. City dwellers need more iodine. The reasons for this will be given on the following pages.

Iodine as found in foods is dependent upon the soils in which they are produced, and the affinity of the particular food or vegetable for the iodine salts. It is generally recognized that certain vegetables and foods contain a larger percentage of iodine than others. Researches in this direction have not been conclusive, but the power of some fruits to stimulate glandular activity, such as increased diuresis and intestinal function, may be explained by the known fact that these fruits contain traces of iodine. The tonic properties of sarsaparilla root and certain berries, and the peculiar value of such vegetables as carrots, celery, etc., are attributed to the iodine within them, which they have the power of abstracting from the soils. All sea-foods contain a large proportion of iodine, and I do not think there are any deviations from this fact, whether it be shell-fish, fish, or sea vegetables the probabilities are that they contain equal quantities of iodine within them.

The capacity of the individual's digestive system may determine the amount of available iodine abstracted from a given sea-food. That the ancients recognized the value of certain sea products as having medicinal properties is referred to in the recent edition of Crile's "The Thyroid Gland." He indicates that the early Greeks treated goiter by the internal administration of burned sea-sponges, not knowing that the substance was rich in iodides.

Peoples who live on sea-foods and who have spent the greater portion of their lives

upon the sea, are comparatively free from the effects of arteriosclerosis and its complications.⁹ That an early appreciation of the iodine content of sea-food existed was found in a scrap-book of 1864, containing an abstract from "Dr. Davy's Angler and His Friends," briefly quoting this: "Moreover, there is, I find, a substance which does not exist in the flesh of land animals, *viz.*, iodine—a substance which may have a beneficial effect upon the health." Quoting further: "We find that the ichthyophagous class are especially strong, healthy and prolific. In no other class than that of the fishers do we see larger families, handsomer women, or more robust and active men, or a greater exemption from the maladies just alluded to."

Perfect physiologic processes, which term covers any mechanical or physical process in the animal organism, is dependent upon the presence in essential amounts, of all chemical elements pertaining to all anabolic and catabolic actions. Oswald says that iodine is essential to any physiologic activity.

Numerous theories have been proposed explaining the special function of iodine in the organism. Jobling and Petersen,¹⁰ 1914, after reviewing the many theories as to its activity, dismiss them all in favor of its special function in the chemistry of the lipoids, deriving this conception from experiments of McLean, whose work satisfied them that the proteins did not retain iodine, while the lipoid fraction abstracted from animal tissues contain 32%, and the water-soluble fraction, 67%. A general tendency in such experimental work has been to ignore one distinctive characteristic of iodine, that is, its solubility in certain agents. It is extremely soluble in water, which is a true solvent; it is also dissolved in fats and fat derivatives. If held within protein bodies, it is no doubt retained in chemical

combination, and attempts to abstract it from proteins mean destruction of the protein molecule. The breaking up of fat and its derivatives within the body would naturally liberate iodine dissolved in it. Meyer and Gottlieb suggest that iodized fatty acids circulate in the body as indifferent or negative substances, are deposited in indifferent locations, and give off free iodine, allowing it to act whenever the necessary conditions are present. This conception is a more rational explanation of the relation between iodine and the chemistry of the fats than that proposed by Jobling,¹¹ Vesie,¹¹ and others. The thyroid probably extracts iodine from fats, lipoids, etc., held in suspension, and from the aqueous solution in the blood stream. Other functioning tissue, such as the lymphatics, etc., derive it from the same source.

Recent writers have dwelt upon the probable connection between fat oxidation and the catalytic power of iodine. Vesie pursues this phase of iodine chemistry quite systematically, but evidently constructs his theory from unproven deductions.

Various specific functions have been attributed to iodine, quoting Kendall: "The compound containing iodine has been isolated in pure crystalline form, it has been shown that this is the substance in the thyroid which is responsible for the physiologic activity of the gland. The physiologic activity referred to is the production of the so-called 'hyperthyroid' symptoms." Further, he says: "It is not iodine *per se* that is necessary, it is the iodized indol which accounts for the physiologic activity. In regard to the relation of iodine to the activity of thyroxin, the presence of iodine in the compound must exert some influence. It is not improbable that it increases the activity of the active group."

I think that iodine, if accepted as a catalytic agent, must be regarded as swaying the metabolism of all the compounds in the body, even that so highly organized as to be represented in the form of a complete living cell. With our present state of knowledge we are limited in our interpretation of the high points of body chemistry to our general knowledge of physiology and pathology culled from incomplete laboratory experimental work. Today our best conclusions can be drawn from the sum total of human suffering and of human experience as gathered from the clinical work of practitioners of medicine.

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(A continuation of this paper will contain further discussion of the physiologic action of iodine as observed by various writers and the author, together with a study of its physiologic therapeutics, including methods of use and dosage.)

SPINAL SUBCUTANEOUS INJECTIONS IN THE TREATMENT OF NERVOUS DISEASES.¹

BY

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When first asked to present the matter of spinal subcutaneous injections, I hesitated on account of the lack of sufficient convincing scientific data. Therefore, before the details of the subject and methods of administration are presented, a few words explaining how the idea came into being, may be of interest.

In June, 1919, a twelve year old child, daughter of a doctor, was suffering from a marked chorea. Several physicians had been called in consultation, and all the ordinary forms of treatment generally advocated were tried. The child kept getting worse. The doctor called me in for advice one Sunday afternoon, and asked if I knew any scheme that could be worked out to save the child, who was cyanosed, suffering from a terrible endocarditis, and twitched in a choreiform manner, about as violently as one sees such a condition. I discussed with the doctor the possibility of a specific toxemia which had a predilection for the brain and spinal cord. I further discussed with him the many evidences we had that toxins may be present in the blood and not in the spinal fluid and *vice-versa*—at least to a degree such poisons could be present in the cerebrospinal fluid and not in the blood. It would be reasonable medical judgment, therefore, to draw off some of these toxins, if it were possible, and use them as an autogenous vaccine to inject subcutaneously. We thought the child would die anyway, so that any possible remedy was worth trying. Thirty c. c. of cerebrospinal fluid were withdrawn by lumbar puncture and this was kept in a sterile test tube with

a cotton cork, and placed on ice. One c. c. was immediately injected subcutaneously in the child's buttocks, and this was repeated again the next day. We didn't see any harm done, so after three days, we did it twice a day. In one week, with the exception of slight twitch in the left hand, the child was apparently cured.

Two weeks later, Dr. Kirk called the writer in consultation for a little girl of 12 with an extreme case of Sydenham's chorea. He had heard of the foregoing case, and wanted to try this form of treatment again. Within one week the results were just as startling as in the first case. Dr. Kirk's patient had been sick for six weeks, with no let-up of the symptoms. Four days after our injections, a distinct improvement was noticed.

These two cases aroused enthusiasm in this subject, which up to this time had not been described anywhere in medical literature; and clinical experiments were performed as follows:

At the Greenpoint Hospital every case of chorea which came to the dispensary was put into the Children's Ward, and at one time we had fourteen cases under observation. The different forms of treatment were used. Some of the cases were isolated and simply kept quiet, with milk diet and nothing else. A few of the cases were given bromides, arsenic and iron, and the balance were treated by spinal subcutaneous injections.

The results here were so overwhelmingly in favor of the injection treatment, that before they left the hospital, every one of these fourteen cases of chorea received the spinal subcutaneous injections. So far as we know, we have had only one relapse.

In March, 1920, sixty cases in all were reported at the Brooklyn Neurological Society, and this paper was published in the *New York Medical Journal* of May, 1920.

In April, 1920, Dr. James Steele of the Greenpoint Hospital, asked me what I

¹ Paper presented at the meeting of the Long Island College Hospital, January 3, 1923.

thought of this form of treatment for encephalitis. I explained to him that I knew of no objection, and I could imagine no harm which might result from a trial. We had a patient deep in lethargy at the hospital, who did not seem to respond to any drugs we used. Forty c. c. of cerebrospinal fluid were obtained from a lumbar puncture, and the fluid was preserved the same as in the chorea case. The injections were made twice a day, and in one week the response to this treatment was phenomenal. Since that time, this form of treatment has been used or suggested by the writer in twenty-two cases of encephalitis. Only one case has died, and that case was at the Holy Family Hospital and the patient was in a state of lethargy for forty days before admitted to the hospital. Eleven of these cases were at the Holy Family Hospital; three of them were patients at the Greenpoint Hospital, three were in private practice, one at the Samaritan Hospital, and four were patients of other physicians, which the writer saw only once in consultation. All these cases have been seen by other physicians who concurred in the diagnosis. Further (complete laboratory work was done in each case), the treatment being administered by them as directed, in the 19 cases not in the writer's private practice, where, of course, he administered it himself.

Despite the above results, in a frank case of acute poliomyelitis, this treatment produced no improvement. Of course it is not advised when a damage has already been done, as after an acute encephalitis leaving a chronic Parkinsonian syndrome, or a mental defect. It is only effective when administered during the acute stages of the disease and, it may be, the earlier the better.

In two cases, one a choreic and one a lethargic encephalitis, diphtheria antitoxin

was used, to see if any foreign protein might produce the same result; but it was valueless.

It is interesting to note in the *Journal of the American Medical Association*, for December 16, 1922, that the Mayo Clinic has been working with cultures, some of which were made from the spinal fluid of encephalitic rabbits, with similar results. They claim, however, to have found a streptococcus; but they were not sure whether this streptococcus was the cause of the disease.

In Vienna, this summer, Dr. Pitcaru told the writer that he had read an abstract of the original communication of the writer's, in the *New York Medical Journal*, and had obtained excellent results; and is now experimenting by using the spinal fluid intravenously in all encephalitic cases. At that time he told the writer he intended to publish his conclusions.

In Berlin at the Charlottenburg-West Hospital this procedure was described, and they said they intended to try the method at the first opportunity.

The method definitely described, consists simply of taking a lumbar puncture and withdrawing all the fluid possible. If under pressure, as much as 60 or 70 c. c. may be withdrawn; but in those cases where there is not an excessive amount of fluid, one must be content with 10 or 15 c. c. A thoroly sterilized glass container should act as a receptacle, with a thoroly sterile cotton stopper, and the material kept on ice until it is to be used. The first injection may be given intramuscularly before the fluid is placed on ice. If no reaction occurs within 24 or 36 hours, there seems to be no logical reason why injections cannot be given twice daily. In no case did the first few injections give the usual vaccine reactions. But in two cases after several in-

Tabulation of all encephalitis cases reported below:

GREENPOINT HOSPITAL.

Case No.	Sex	Age	Admission	Date discharged	Result	Remarks
99	M	35	1-14-21	1-15-21	Died	Hemorrhage into temporal bone
2535	F	5	9- 9-21	9-13-21	Died	Autopsy
2651	M	4	9-27-21	9-28-21	Died	Otitis media (complication)
239	M	47	1-15-21	1-21-21	Died	Autopsy
471	M	40	2- 8-21	2-28-21	Died	
936	M	35	3-31-21	4- 5-21	Died	Autopsy
1338	F	19	3- 9-21	4-14-21	Cured	
* 440	F	38	1-29-20	2-29-20	Cured	
446	M	20	1-19-20	2-29-20	Cured	
* 465	M	11	1-11-20	3- 3-20	Cured	
1113	M	12	2-23-20	5-26-20	Cured	
1477	M	36	5-21-20	7- 4-20	Cured	
1145	M	27	3- 3-20	5-30-20	Cured	
*2496	M	17	10- 9-20	11-20-20	Cured	
1166	F	30	4-12-22	5-11-22	Cured	
447	M	39	4-20-22	4-22-22	Died	Autopsy
1752	F	23	7-11-22	7-25-22	Cured	
7	M	8	7-22-22	7-28-22	Cured	
1910	M	42	7-31-22	8-10-22	Cured	
1060	M	15	4-29-22	5- 7-22	Cured	

SAMARITAN HOSPITAL

Case No.	Sex	Age	Admission	Date discharged	Result	Remarks
*1746	F	9	6-20-21	8-15-21	Cured	

HOLY FAMILY HOSPITAL (all treated "S. S.")

Case No.	Sex	Age	Admission	Date discharged	Result	Remarks
*14691	M	58	10-27-20	11- 6-20	Cured	
*13960	F	38	6-24-20	7- 9-20	Improved	
*13079	M	40	1-14-20	4-10-20	Improved	
*16004	F	55	6-15-21	6-24-21	Cured	
*15869	F	30	5-22-21	8-21-21	Cured	
*15567	M	20	3-31-21	5- 6-21	Cured	
*15219	F	17	1-31-21	2-14-21	Cured	
*15151	M	36	1-14-21	2- 6-21	Cured	
*15158	M	44	1-17-21	2-12-21	Cured	
*17195	M	27	1- 7-22	1-11-22	Died	In lethargy for 40 days before entering hospital
*17646	F	34	3-27-22	7-13-22	Cured	

*Indicates those cases receiving "S. S." treatment.

Totals: 1 death in 22 cases for "S. S." treatment.

7 deaths in 20 cases by other methods of treatment.

jections, there was quite a severe reaction, the temperature going to 104 in one case and 105 in the other; and the latter had a herpetiform rash. In both these cases we stopped the injections, and progress continued. As we give it at present, each in-

jection consists of 2 c. c. of the fluid, which previous to injection is heated to about body temperature. In our experience, the particular site of the injection was not considered of great importance, altho most were made in the buttocks. We have given as

many as 20 intramuscular injections in a case, and stopped only when the degree of improvement warranted it, except in the cases mentioned where we had had severe reaction. The intervals between injections were increased as the recovery progressed. Toward the end, only about one injection a week was made. If enough cerebrospinal fluid cannot be obtained in the first puncture, a second or third may be done.

The only flaw in the scientific working out of the whole proposition seems to be the lack of standardization of this vaccine. One spinal fluid may be a thousand times stronger in its infectious or toxic property than another. However, in any given case, a definite amount of virulence is probably represented by the same quantity of fluid collected at any one time from the same individual. And an injection of a much smaller amount of toxin than was extracted, cannot do much damage to the patient.

One critic thought the psychic effect of the lumbar puncture or the withdrawal of the fluid in those cases where there was endema of the brain, was the cause for some of the improvement. It would be foolish to attempt to absolutely contradict this *in toto* —that is, a certain amount of improvement may be effected from these causes; but when one follows a series of cases he is soon convinced of the value of the specific treatment. The critic above mentioned, was astonished by the results of lumbar punctures without injections on a few of his patients, and then supplementing on the same cases, the spinal subcutaneous treatment.

In conclusion, this is a simple, logical, apparently harmless method of treatment for those obscure diseases which have a predilection for the neuronic elements of the body; and on the basis of three years' ex-

perience by numerous observers is surely worthy of further investigation. Whether this treatment may be extended to other diseases of these parts, such as cerebrospinal syphilis, acute anterior poliomyelitis, epilepsy of some types, even some forms of insanity, etc., only time and experience can tell.

502 Washington Avenue.

SOME POINTS IN THE MANAGEMENT OF PREGNANCY AND LABOR.¹

BY

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The modern woman does not bear children with good grace. Her mental reaction toward pregnancy is not cheerful. She is apparently unable to cope with the strain put upon her system by the process of childbirth. Nowadays, the physician is confronted with many problems in the management of pregnancy and labor, which the older practitioner of medicine never had to give thought or consideration. It is more difficult today to carry thru a "maternity case" to a successful issue, than it was a generation ago.

There are many reasons for it. Some are obvious and understandable and, therefore, manageable. In many instances, however, the most competent obstetrician fails to discover the cause for the utter lack of self-mastery on the part of many patients, during the most critical period of their lives.

As a rule, the intelligent woman will give little or no trouble either to the physician or

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to those in her immediate family circle. The so-called intellectual woman, however, is a source of great annoyance, not only to the doctor, but also to her husband and her immediate environment.

This type of woman is usually not contented unless she peruses a library of books, not only on obstetrics, but also on eugenics, psychology and biology, with the result that her mind becomes so confused that she keeps her physician busy in trying to make him solve to her the riddles of nature. Such women must be discouraged from reading on any subject relating to childbirth, and be urged to familiarize themselves with the problems of how to take care of a baby.

When the physician succeeds in making the pregnant woman think more of the future baby and less of herself, he will have accomplished a great deal in the management of his obstetrical case. Usually, as experience increases, the physician instinctively knows how to manage and guide some of these patients. He is able in a goodly number of instances to foretell their behavior during pregnancy and the courage they will display during labor. The most difficult patients to manage are those, who, notwithstanding the modern education they have received, have themselves on their minds. The patients most easily controlled and managed are those who do not consider themselves martyrs because they are bearing children.

The physical characteristics of the patient, which have a definite relationship and a practical bearing on the development of the pelvic basin, are well known and need no discussion. The type of woman who is likely to have a contracted pelvis can be readily visualized by the physician. The greater task, however, is to be able to form some idea as to what the constitutional apt-

ness of a given patient will be in response to the natural demand made upon her to deliver the child.

The normal mechanism entailed in the passing of a child thru the pelvis is practically the same in every woman. The powers and structures concerned in this process do not always react alike. It is the proper understanding of that phase of labor, which is so essential in the management of the individual patient. The constitutional aspect of the patient and its possible relation to the function of labor is not well understood by us and we are, therefore, unable to interpret it properly; the result is that many cases are not managed well by the attending obstetrician.

The first real problems during pregnancy, with which we are confronted, are the various degrees of systemic intoxication, of which so many women suffer during the early period of gestation. All investigations heretofore made on this subject, failed to disclose its true etiology. However, ignorant as we may be of the primary cause or causes of toxemia, nevertheless, it is definitely certain that the secondary constitutional manifestations associated with are due to the lack of proper bodily nutrition, because of severe gastrointestinal disturbances.

While I am certain that ultimately it will be proved that these various manifestations, such as nausea, salivation and vomiting, are produced by definite chemical changes, which take place because of the addition of the pregnancy to the normal human economy, still I cannot but feel that in many instances they are mental in origin, and that the neurotic theory cannot be entirely eliminated in the treatment of these patients.

I am unable to recollect a single instance in my own practice where I was compelled

to interrupt the pregnancy because of pernicious vomiting. The successful management of these patients to a great extent depends on how soon they are removed from their immediate environment, so that the members of the family will not always be on hand to commiserate with them. These patients must be placed in a hospital and the promiscuous visiting by their friends or members of their families must be strictly forbidden.

When the nausea and vomiting continue for some time, these patients begin to suffer from symptoms of starvation and dehydration; associated with it is a rapid fall in the blood-pressure. Low blood-pressure means sluggish capillary circulation, and this by itself is sufficient to produce an altered glandular secretion of the mucous membranes of the digestive tract and it therefore helps to aggravate an already impaired function of digestion.

In order to overcome this phase of the constitutional disturbance, I recently adopted the use of digitalis in all cases of vomiting of pregnancy which assume a more serious aspect. It is really astonishing how much some of these patients improve under this treatment. As soon as the blood-pressure rises, the processes of digestion seem to improve and a greater desire for food develops. (Dr. Polak.)

Organic extracts, in my experience, were of little avail in the treatment of this class of cases, altho I employed them, both in private and hospital practice. Occasionally some temporary relief might be noticed following their administration, but I was never fortunate enough to obtain the good results claimed for organotherapy in these patients by many obstetricians thruout the country.

Contrary to the prevailing views, I al-

ways insist that the diet of these patients should consist of solid food or as nearly solid as possible. Hard food substances will tend to stimulate greater gastrointestinal activity and digestion will be more readily accomplished. Fluids, in the form of alkaline water, should be allowed only between meals. Sleep and rest must be induced and this is best accomplished by the use of minute doses of morphine, repeated at frequent intervals.

During the past year I was asked to see a patient who had four pregnancies interrupted in the third month because of severe vomiting and exhaustion which followed it. She was then in the seventh week and was quite prostrated when I saw her. I had her removed to the hospital and, upon careful examination there, we found her suffering from marked signs and symptoms which follow periods of starvation. During her four months' stay in the hospital we employed every known form of treatment. Finally her symptoms began to subside, her general condition gradually began to improve and the pregnancy continued to term and she gave birth to a healthy baby. I am certain that had this patient remained at home the pregnancy would have been interrupted, notwithstanding her great anxiety to have a child.

Patients who suffer from pernicious vomiting of pregnancy may be permitted to continue the pregnancy as long as their loss of body weight does not exceed 20% and the pulse-rate remains below 120; slight deviations may be allowed, but extreme departure from these two main guiding points will very often prove dangerous, if not fatal.

Pregnancy, no matter how normal it may be, taxes the constitution of the woman. Every important organ in the body under-

goes hypertrophy, in order to meet the demands made upon it. The organs which are most likely to be affected by the strain are the heart and kidneys. We are fairly well familiar with, and are constantly on our watch for, the signs and symptoms which point to kidney complications during pregnancy.

With all that, we still have many women die from eclampsia. Whether it is due to carelessness on the part of the physician or on the part of the patient does not in any way alter the situation, for it must be conceded that in the light of our modern knowledge it is an avoidable complication in the greatest number of instances.

Personally, I believe that the reason why we still have so many cases of eclampsia is that there is a lack of proper appreciation of the pre-eclamptic state. Every case of eclampsia has its prodromal stage, however slight it may be. It is always preceded by constitutional disturbance which produces general malaise, loss of appetite, epigastric pain or oppression and irritability of the uterus, giving abdominal pain and slight headaches. At this time the blood-pressure may be slightly altered, but very often no albumen in the urine is found.

It is during this stage that treatment must be instituted at once and it is astonishing how readily these patients respond and how quickly they improve, if they are properly managed. When sudden loss of appetite, accompanied by general malaise and epigastric pain and headache occurs during the last period of pregnancy, it is an indication that the normal bodily functions have been disturbed and, if allowed to continue untreated, severe complications are sure to follow.

The treatment at this time is very simple: rest in bed, a diet of milk and water, suffi-

cient sleep and possibly, small doses of thyroid extract to promote glandular secretion, is all that is necessary at this stage of the disease. Usually, improvement is noticed in a very short time; however, these patients must be watched carefully, for a relapse may take place at any time.

The treatment of eclampsia has again become a battle-ground for the extreme conservatives and the ultra-radicals among the obstetricians. Personally, I have always refused to abide by any dogma in the practice of medicine. Neither the disease nor the patient permits of any standardization, and no standard treatment can be successfully employed in each and every case. There is no doubt that Cæsarian section still has a place in the treatment of well-selected cases of eclampsia, the conservatives notwithstanding, and that morphine and all the other measures used for control of the convulsions may be opportunely employed in certain cases, in which the toxemia is not very severe, no radical can deny. The secret of the successful management of these cases lies in selection of the proper method of treatment which is especially suitable for a particular case.

Heart disease, associated with pregnancy and labor, still offers a fruitful field for investigation. We have no means now of ascertaining the amount of heart reserve such a patient may have. No one can foretell when failure of compensation will take place. My experience with modern cardiologists in cases of heart disease during pregnancy has been very disappointing. They do not seem to have a proper conception of the relationship of pregnancy and labor and cardiac competency. I have come to believe that the intelligent obstetrician is capable of better judging as to the amount of reserve power which the heart may

have to withstand the strain put upon it by pregnancy and labor and is, therefore, in a better position to decide upon the management of pregnancy or the mode of delivery in this class of patients.

Very often the break in compensation in these patients is so sudden that there is hardly any forewarning. I was confronted with such a situation about 18 months ago: A young woman, para-I, who was carefully watched by Dr. Eisenbud and myself, because of cardiac disease. She came to my office during the 36th week of the pregnancy, as I was then to decide upon the method of delivery to be employed in her case. She was apparently well and had no sign or symptom which would point to a beginning of cardiac decompensation. However, while dressing to go home, she suddenly collapsed and developed pulmonary edema and all the signs of acute heart failure. Three hours elapsed before she rallied, so that she could be safely removed to a hospital by an ambulance.

Once cardiac decompensation takes place during pregnancy, restoration of the heart function must be the first objective in our treatment, and as soon as that is accomplished the pregnancy must be terminated, for a subsequent break in the heart action may prove to be irreparable.

Fortunately, patients who suffer from the severer forms of heart disease seldom carry to full term. Nature seems to conserve these patients, for they usually give birth prematurely. However, if labor does not set in at a desirable time, it is very unwise to allow the pregnancy to continue to full term, for it is comparatively safe for both mother and child to terminate it two or three weeks before and in this way the heart will be spared the extra tax put upon it unnecessarily.

The methods to be employed for the termination of labor vary. Patients in whom the cervix is soft and the vaginal vault not rigid and the fetal head situated in the pelvic basin are suitable cases for either the bag or bougie. If, on other hand, the cervix is long and rigid and the fetal head high in the false pelvis and, especially if the patient is an elderly primipara, the most suitable method of delivery is by classical Cæsarian section. During the past three years I delivered a number of women, who were suffering from the severer forms of heart disease, by Cæsarian section under local anesthesia. The results were uniformly successful for both mother and child.

Fibroid tumors of the uterus, complicating pregnancy, and their proper management will often tax the ingenuity of the most astute obstetrician. Unfortunately, these patients frequently fall into the hands of the general surgeon who lacks the necessary experience for a proper conception of the relationship of these growths and pregnancy. They almost always advise operative interference and often it is to everlasting regret of the patient.

As a general rule, it may be stated that there is a distinct contraindication for the removal of a tumor from a pregnant uterus, if it causes no symptoms. Very often such interference will rob the woman of her only chance to have a child. If, however, symptoms of severe pain and pressure develop, the indication is clear and it is dangerous to wait too long.

Generally speaking, it can be safely said that the morbidity and mortality resulting from complications arising during pregnancy are gradually decreasing. The intelligent physician has learned a great deal about prenatal care. If he is confronted with an unusual complication, he summons

special aid, and treatment is promptly instituted. We do not nowadays see so many of the tragic incidents which occurred in the practice of obstetrics ten or fifteen years ago. In those days operative interference was only resorted to when the patient was already in the extremis. Patients who suffered from placenta previa were allowed to bleed to death, and even now the results of our treatment of this group of patients are not as good as they should have been, because both the family physician and even some obstetricians refuse to recognize that such anomaly in a patient, who is near or at term and not in labor, and whose cervix is long and rigid, cannot be managed by the vaginal route with any degree of safety.

Somehow, the midwifery point of view is still permeating the practice of obstetrics, and we are slow in adopting the rational surgical principles which we utilize daily in our work in other branches of surgery. The result is that the morbidity and mortality remain fairly constant in the various types of hemorrhage which take place during the later period of pregnancy.

The wider application of abdominal Cæsarian section in recent years has brought forth a new problem in obstetrics. While the dictum, "Once a Cæsarian, always a Cæsarian," does not hold true, still the management of a Cæsarianized woman during a subsequent pregnancy causes no little anxiety to the physician. Whether a uterine scar will withstand pregnancy and labor no one can foretell. Spontaneous rupture of the scar during pregnancy occurs not infrequently, and during labor it takes place more frequently than is generally supposed. Moreover, that such a rupture of the scar may not be accompanied by severe constitutional disturbance is illustrated by the following case: A para-VI, who was delivered

two years previous to her present illness by Cæsarian section because of severe bleeding from a placenta previa, from which she made an uneventful recovery. She became pregnant again 8 months ago. Eight days before I was called to see her, she was taken ill with a sudden chill and some pain in the abdomen and right chest. The diagnosis of pneumonia was made by her physician and he had her removed to the hospital. Her temperature ranged between 101 and 104 degrees Fahrenheit. Supportive treatment was administered and the patient did fairly well, except that she continued to be somewhat distended, which no medication seemed to control. Many consultations were held. The obstetrician who had performed the Cæsarian section also saw her. It was finally agreed that the patient was suffering from an unresolved pneumonia. She did not seem to improve and the attending physician asked me to see her. (It was 35 miles out of New York.)

On careful examination I concluded that the patient had a spontaneous rupture of the uterus, and the fetus was in the free abdominal cavity and the uterus was in the right quadrant of the abdomen. I ventured to state that the rupture occurred nine days previously, when the patient took suddenly ill. Such a diagnosis was so unexpected by the physicians in attendance that they really questioned and hardly believed it. After some discussion, the physician in charge of the patient said to me that, if I were certain of my diagnosis, I ought to be ready to substantiate it by an operation. I accepted the challenge uncheerfully, but nevertheless graciously. On opening the abdomen I found the fetus and placenta floating in the abdominal cavity; there were a few clots of blood scattered among the

coils of intestines, indicating that the rupture must have taken place days ago.

The real problems in the practice of obstetrics begin as soon as labor sets in. It is at this time that good judgment is required in the management of every case. The successful outcome of a case will depend in a great measure on the proper understanding by the physician, as to the kind of labor the patient will have. It is especially important to be able to judge the first stage of labor.

In recent years, especially in metropolitan districts, the number of women who are likely to have a tedious and difficult first stage of labor is constantly on the increase. The present economic and industrial system has brought forth a type of woman who is incapable of performing the work which she is destined to do in connection with the propagation of the species. Her natural powers are exhausted before the task of childbirth is half completed. She begins to clamor for relief at a time when it cannot properly be given to her and, if given, it not only works havoc with the mother but causes many an infant to be still-born.

It is my firm conviction that labor should never be terminated before the first stage is completed, unless a real emergency arises which may prove dangerous to either mother or child. The duration of the first stage of labor will depend on the force of the uterine contractions. However, there are many patients in whom, for some reason, dilatation does not take place, notwithstanding the frequent and forceful uterine contractions. Such patients become exhausted very quickly and, unless the physician institutes proper relief at the proper time, labor will become complicated. It is in this class of patients that the use of morphine becomes so essential. Morphine, given at the proper time

and at the proper interval, will conserve the strength of these patients.

Frequently the first stage of labor in these patients lasts 36 to 48 hours and a great deal of morphine will have to be given, in order to procure intervals of rest and sleep, and at the same time promote relaxation of the cervix. Such type of labor must invariably be conducted at the expense of the child, but it will spare the mother from the irreparable damage to the soft parts, which is mostly always caused by attempts at delivery before the first stage is completed.

The indications for the use of forceps are not properly understood and, therefore, it is greatly abused. If the mechanical principles governing the ball-and-socket joint would be applied to the relation which the fetal head bears to the pelvic basin, I am sure that no attempts would ever be made to use forceps unless the head completely fills up the pelvic basin and is out of the cervical canal. If this rule were adhered to in actual practice, I am certain that the mortality, and especially the morbidity now taking place in the lying-in chamber, would be greatly reduced.

It seems to me that this important lesson in obstetrics must be first taught by the obstetricians. At present this sin is most frequently committed by them, especially when they are called in consultation to a private home, and at the behest of either the doctor or patient they terminate labor too early. To safeguard a patient during a prolonged and tedious first stage requires a great deal of patience on the part of the physician and much endurance on the part of the patient.

Once the first stage of labor is completed and the head hugging the pubic arch, there is really no good reason for allowing the patient to suffer too long. At this time a

great many women have used up all their natural forces, are exhausted, and are unable to deliver themselves spontaneously. During this stage, delivery of the child with forceps is readily accomplished, if only a few elementary principles are adhered to. Very little damage to the soft parts will take place, if the perineum is thoroly "ironed out" before the forceps are applied. The second stage of labor ought never to be allowed to become protracted.

The third stage of labor has been greatly enhanced in recent years by the administration of pituitrin as soon as the child is born. Pituitrin, by inducing strong uterine contraction, causes the placenta to separate sooner and be expelled in a shorter time. The loss of blood is minimized and there is less likelihood of any accumulation of blood-clots in the uterus. The fear that the cervix may contract before the placenta is expelled is not well founded. It very seldom happens in patients who deliver at or near term. Pituitrin may cause contraction of the cervix before the placenta is expelled in patients who deliver themselves prematurely during the middle three months of pregnancy and, in such cases, its use must be restricted during the third stage of labor.

Complications occurring during the post-partum period are mostly in the nature of infection. The infective process may begin at any point of the birth canal; usually it arises in the interior of the uterus and localizes there, or it may quickly involve the contiguous structures. When constitutional symptoms have set in, the inflammatory reaction has already traversed the deeper structures and, therefore, no amount of intra-uterine manipulation can stop the process from spreading further. On the contrary, it will tend to disturb the protective wall which usually forms to counter-

act the bacterial invasion. The uterus will always expel pieces of placenta or membrane and artificial removal, therefore, is very seldom necessary. Very often intra-uterine instrumentation, in the presence of infection, will convert a local infection to a general infection, by breaking thru the barrier which nature has placed there to protect the uterus against the infecting organism.

In conclusion, I wish to state that I know it is difficult to translate into words the mental picture one gets thru the experience gained in the management of difficult obstetrical complications; furthermore, that it is more difficult to transmit such a visualization to one who has not as yet acquired the proper conception of the mechanism involved in the process of childbirth. One really requires the development of a proper obstetrical mental attitude in order to be able to manage an abnormal case of labor successfully. The physician must recognize that pregnancy is an ordeal, normal labor a storm, and abnormal labor a battle in the life of the woman, and that it is his function to help her come thru unsoiled and undamaged.

Vesical Distress.—In many cases of vesical distress in women (*Urologic and Cutaneous Review*, March, 1923), where no bladder or kidney lesion may be determined, a careful examination of the urethra will disclose a granular state indicating topical applications of strong silver solutions.

Initial Decay of the Teeth.—Seventy-five per cent. of initial decay resulting in ultimate loss of molars begins on the grinding surface of teeth, says Dr. Thaddeus P. Hyatt, dental director, Metropolitan Life Insurance Company.

CHIROPRACTIC PROPAGANDA.

BY

MALFORD W. THEWLIS, M. D.,
Providence, R. I.

In extending propaganda for chiropractic, B. J. Palmer has discovered a way of entering the home, like the strange wooden horse entering Troy, Palmer being cloaked as a member of one of our honored and trustworthy fraternal organizations, and when in the home is able to spread his teachings as he wishes. His method of entering the firesides, reaching many people throughout the country at little expense, is interesting to consider. For some time, chiropractors have been broadcasting radio messages, showing the advantages of this pseudo-medical cult and the latest method is to reach the people by radiophone, appealing to members of this honorable fraternity as a part of their scheme.

Palmer has a radiophone broadcasting station at his school of chiropractic, Davenport, Iowa. This station (WOC) is owned and operated by the Palmer School of Chiropractic. First, as a part of Palmer's scheme, letters are sent to the lodges of this fraternity, requesting them to take the matter up with the lodges in their jurisdictions, calling attention to a series of talks on "The Brotherhood of Man," to be broadcasted by radiophone under the auspices of the Service Board of this lodge. The letters sent by these boards to their lodges are as follows:

"..... Service Board
of the

GRAND LODGE OF

"Dear Sir and Brother:

"On Wednesday, February 21, 1923, at 8.00 p. m., central time, there will be broadcasted from the radio station WOC, Daven-

port, Iowa, the introductory to a series of talks on 'The Brotherhood of Man.' These talks will be given under the auspices of the Service Association of the United States. This talk will be succeeded by others of a like nature every two weeks; the second in the series will be given Wednesday, March 7, at 8.00 p. m., central standard time from the same station.

"They request listeners to notify them by letter or telegram as to how certain features impress. If a number arouses no enthusiasm and creates no comment, then that feature is dropped.

"Therefore, we earnestly suggest that you give this matter your widest possible publicity in your lodge.

"Comments should be mailed to Radio Station WOC, The Palmer School of Chiropractic, Davenport, Iowa. We would suggest that you notify every member of the lodge who might be interested in radio regarding this broadcasting."

One who wrote to this station, showing an interest in these messages received the following printed card:

"DAVENPORT, IOWA, U. S. A.,
"Where the West Begins."

"Dear Friend:

"This acknowledges your recent communication and confirms your reception of our signals. We appreciate your report and trust that you will hear and enjoy our programs regularly.

"Station WOC is owned and operated by the Palmer School of Chiropractic, Davenport, Iowa, and is equipped with a complete transmitter made for us by the Western Electric Co. It has an antenna output of 500 watts, using two 250-watt tubes as oscillators and two 250-watt tubes as modulators (Heising's System). There is also one

50-watt tube used as voice amplifier. The speech input amplifier is complete, with control panel especially build for speech and music.

"If you come to the city 'where the West begins,' we want you to come and visit our institution. This card is your pass to visit our broadcasting rooms.

"Our announcers are BWS, BJP, ANR, FWE and GWW.

"By the cooperation and suggestions of friends like you, we have succeeded in making WOC one of the finest stations in the country. We hope to hear from you again.

THE PALMER SCHOOL OF CHIROPRACTIC
RADIOPHONE BROADCASTING STATION,
WOC.

"The schedule appearing on the reverse side is standard. Detailed programs and special numbers are announced by radio and in newspapers thruout the country which request our free program."

The whole plan seems innocent but it is actually a part of the chiropractic propaganda. It is the least expensive form of advertising and reaches the homes to better advantage than a newspaper. In order to show that this scheme is Palmer's Chiropractic Propaganda, and not that of the fraternity whose good name he is using, may I not ask you to indulge in a few lines from Palmer's catalogue of his school? Under the heading, "Radiophone," he states: "Our radio station is designated as WOC, The Palmer School of Chiropractic, Davenport, Iowa. Messages from this station may be intercepted by tuning a receiving set to a wave length of 400 meters.

"Prominent singers, teachers, lecturers and celebrated persons are invited to transmit their specialities or subjects, to say nothing of the government weather forecasts and trade reports which are sent out

daily. In addition we broadcast educational matter on the subject of chiropractic each afternoon at 3.30, Central Standard time, and to these talks chiropractors invite their patients to listen in that they may learn more about the science. A copy of our printed program is furnished free each week on request.

"As a Palmer School graduate, can't you see the advantages of Palmer radio broadcasting? Just picture yourself as a practicing chiropractor, being able to invite the prominent people of your city to your office each afternoon or evening to be entertained by your radio sets. Imagine the many new friends and patients you will acquire by this courtesy. All this can be yours by simply having a receiving apparatus installed in your office, the cost of which will be hardly more than that of a phonograph."

Palmer gives a course in salesmanship in his school. The requirements to enter are a common school education or less; it requires 18 consecutive months to get the degree of D. C. (Doctor of Chiropractic) and Ph. C. (Philosopher of Chiropractic). Palmer claims that he has the "prettiest printery in America," which will help materially to spread his propaganda thruout the country. All in all, it is the most colossal institution in the world for the spread of mountebankery; these men are "graduated" with the latest methods of preying upon ignorant and unfortunate sufferers from disease.

There is no country in the world where health is exploited for mercenary purposes as it is in the United States. What other country would allow these meddlers and plunderers of the sick to thrive as they do here? It is said that the Governor of Tennessee has signed a bill allowing chiropractors to practice and to sign death cer-

tificates. What next? Each day they are creeping ahead, under the very eyes of the medical profession, removing "clicks" from the spines of sick people for pulmonary tuberculosis, appendicitis, gall-stones, infantile paralysis and every other disease which offers a financial recompense for its treatment.

Koch, Lister, Pasteur, Metchnikoff, Trousseau, and so many others spent their lives for the development of science, to prevent and relieve the suffering from disease. Can these pseudomedical cults name a single person who has given the world any serious scientific work? The only solution is to have laws preventing anyone from treating disease who has not passed an examination for a license to practice medicine before the regular medical examining boards.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

VI.

"The coolies will not go more than one day's march, Sahib," explained the coolie agent at Hathiganj, the railway terminal from which Dr. Jordan was setting out for a vacation trip to the borders of Tibet. "There is cholera along the way."

"I will pay double," urged Dr. Jordan.

The Anglo-Indian agent shrugged one shoulder. "Pay is no object to them at such times. They would not go at all were they not compelled. Each one fears he may die away from home. If his eldest son is not there to perform the funeral ceremony—"

"I know," smiled Dr. Jordan. "Of course I would not force them to go."

"I can fit you out with coolies to Ram Tal, and I'll give you a coolie *chaudhri*, who will pick up coolies or ponies for you each morning," continued the agent amiably, watching for his commission.

In this way, Dr. Jordan's party, consisting only of himself and his Christian cook, Munna, was strengthened by the addition of a Government representative. Clad in a dingy muslin coat, loosely-draped loin-cloth falling to his knees, heavy, toe-curled sandals, and a white turban, the coolie *chaudhri* was a figure to inspire awe among his inferiors.

The matter of a riding-pony was quickly settled. Only one in the line drawn up for



(Photo by L. W. Sullivan)

FIG. 1.—Hillmen Pausing to Greet Dr. Jordan.

approval looked strong enough to bear the doctor's weight. His master, Gungu, a seasoned Hindu hillman, bargained for the entire trip. "And I will show you all the good drinking water," he volunteered.

The luggage was weighed out, and twelve coolies drafted. A great bustle followed, as each coolie tested and compared the pieces. Slowly they adjusted the ropes and shouldered their loads, supporting the weight by a broad cloth strap across the forehead.

One by one they started off up the steep ascent, a mere trail hugging the side of the mountain. Ruppa, the pony, walked four inches from the edge, but Gungu vouched for his surefootedness.

Only twelve miles in the day's march, and Dr. Jordan settled himself to enjoy the opportunity for relaxation.

Flocks of parrots and bands of monkeys sported among the trees below them, and chattered inhospitably.

Down the trail came a long string of

ponies carrying clumsy loads of hides. Nauseating odors blended with a sense of relief at their taking the outer edge of the trail. The precipice had now become very steep. It was a dizzy look, down hundreds of feet into the stony bed of a river.

"Ai, Sahib, look!" called Gungu, who was walking ahead. He pointed toward several vultures circling low. "Some one must have gone over the edge."

Some one had. A hundred feet down the side of the cliff a pony had been caught in its fall by a small bushy oak. Two men were scrambling back up to the trail with its load of hides.



(Photo by Author)

FIG. 2.—Dak Bungalow and Pack Ponies.

"Why do they not kill it?" asked Dr. Jordan.

"Kill it? They may not take a life, Sahib," answered Gungu reproachfully. "It will die soon."

After the first three miles, the path grew easier. Level, shady stretches were now frequent.

"Water in a little while, Sahib," announced Gungu, at about eleven o'clock. "We shall stop for breakfast."

It was a slight stream of water which marked the place for food. One could step across it. But the trail broadened out into an expanse which afforded room for the party to build its several fires. For the coolies, tho Brahmins, were of varying classes, and might not cook together.

Before preparing their rice, they bathed in the running water. The same stream

served as wash bowl, sewer, and drinking fountain.

Dr. Jordan observed Gungu dipping water some ten feet below the bathing *rendezvous*. When he saw him carry it to Munna, who had built his fire at a distance, he interfered.

"It is clean, Sahib," protested Gungu. "It is running water."

The mention of cholera did not shake his statement. "Whose day has come, he will die," was the stolid retort.

Quite to his disgust, Dr. Jordan bade him shoulder his cans and go with him up the wooded hillside, following the stream until there were no signs of man. Here the water sparkled invitingly cool, and Gungu caught it in his cans as it dropped over a projecting stone.

In spite of its apparent purity, Dr. Jordan drank none until Munna had boiled it several minutes. Then, in the form of tea, he drank his fill.

By two o'clock all were ready to pick up their loads and resume the trail.

The road wound along the face of the hill, so that they soon re-crossed the stream which had given them refreshment. Here a group of coolies had halted for breakfast. In the bed of the stream they had a funeral pyre burning.

"Cholera!" came the word back the line. Gungu made inquiries.

"He died while we were eating our rice," they responded.

"It is well, Sahib, that I boiled the water long," remarked Munna, as he took in the scene.

The coolies were now panic-stricken. Only the authority of the coolie *chaudhri* kept them from dropping their loads and retreating. The stronger men quickened their steps, the weaker ones puffed, as they raced for the *dak* bungalow, which marked the end of the day's march. All sense of comradeship was dissipated. No one waited for another. Upon arrival, each seized his eight annas, and started back down the trail without rest.

It was six o'clock when the last one came in, plainly exhausted. Dr. Jordan urged him to stay until morning.

"No, *hazur*, I must not lie down until I reach my own house." And he trudged off down the hill.

Each day was like the last one. The *chaudhri* would whip up an outfit to carry them one stage. When he got ponies instead of men, Dr. Jordan was glad, for they did not know the fear of disease.

He was frequently asked for medicine, as his coolies, with much pride, announced his high calling to those they met. Even Brahmins in the fields, with plows or harrows, halted to greet him with a hearty "Salaam, Doctor Sahib!"

As they reached the village of Goligarh, they observed a crowd before a hut near the road.

"What is it?" asked Munna.

"Mari Māta¹ is here," was the reply. "The *hakim* is treating Prem Dass for cholera."

Dr. Jordan drew up for information.

"He is now asleep, *hazur*," went on the interested neighbor, "from a draught of opium and *bhang*. His hands and feet are tied so that they remain just eight inches apart. It is very good treatment, *hazur*."

"Does it cure the cholera?" pursued Dr. Jordan.

"Oh, yes, *hazur*, the draught quiets them, and if they wake up the next day, the disease is gone. But for many it is too late. Mari Māta will not be thwarted always."

At the bungalow Dr. Jordan was besieged for medicine. "Quinine, *hazur*, for my son, he has great fever." "My two wives have cholera. Please give me medicine for it."

Many were afflicted with itch. To these Dr. Jordan ministered, but he dared not send medicine to the absent.

"Boil your drinking water," he urged.

"Nay, *hazur*, that is not our custom," they responded politely.

"Stay over here tomorrow, Sahib," begged the headman. "We will bring you all our sick."

This warm invitation Dr. Jordan was compelled to decline; for his days were counted out, and his stock of medicine very small.

Among those who plead the hardest was the bungalow sweeper. "All my children have the itch, *hazur*. Tomorrow they could come to you."

Sitting on the verandah in the twilight, Dr. Jordan noticed the sweeper in his room, zealously dusting and tidying the tables.

The next afternoon when he unpacked, Munna missed certain useful articles. He suggested that they had been stolen, for he had used them at Goligarh.

* * *

When Dr. Jordan arrived at Goligarh on the return trip, he was promptly visited by two men who came asking, "*Hazur*, kindly give us more of the black medicine." "And some more of the hot medicine, *hazur*," chimed in the other.

"Black medicine?" queried Dr. Jordan. "I did not give any black medicine."



(Photo by Author)

FIG. 3.—Hunting Cholera-free Water.

"You gave it to the *hakim*, *hazur*, to dispense to us, because you had to hurry on."

Professional etiquette restrained a denial. "What sort of medicine was it?" he asked.

"A black salve, *hazur*, very black, and in a red box, a little round tin box. The *hakim* mixed it with the juice of the *nim* tree." Painstakingly he untied a corner of his loin cloth, and produced a bit of folded paper from which he unwrapped a dry leaf blackened on one side. "This is the leaf on which the *hakim* gave me the salve. See?"

"Did it cure you?"

"Oh yes, *hazur*, it cured the itch for us

¹ Mother Death.

who used it. But there was not enough for all."

Dr. Jordan rubbed one finger meditatively across the dry leaf. "Ah!" he said in English, turning to Munna, "So that is what became of my shoe polish!"

"The medicine I want was in a bottle, *hazur*," pressed the other man, sensing a hitch in the negotiations. "It was very hot. It cured me of the cholera. Now I want some for my son."

"What kind of bottle was it?" asked Dr. Jordan.

"An English bottle, *hazur*, with a glass top, and red paper on the side."

"Worcestershire sauce!" exclaimed Munna. "The villains! Thieves! For the want of these two things you have suffered thruout your entire trip!"



(From Our Regular Correspondent.)

Value of Light in Treatment.

The favorable therapeutic effects of light and especially, of course, sunlight on certain diseases and conditions of ill health is now widely recognized. The treatment of tuberculosis and of joint tuberculosis in children in particular has been almost revolutionized by the employment of the sun as a therapeutic agent. Rickets, again; is greatly benefited by sunlight, and while the writer still firmly holds the view that rickets is for the most part a "dietetic" disease, yet, there is no getting away from the fact that lack of sunlight is a factor of no mean weight in the production of that state of deviation from normal health to which has been given the name of rickets. But there is no need to dwell on the point that the remedial effects of sunlight are of the greatest potency and that in certain diseases when employed by medical men who have made a thoro study of the question, they are curative. Also substitutes for sunlight may be used with strikingly good results in some skin affections and in lupus vulgaris such results have been remarkable. Some twenty-

five years or so ago the big London Hospital in the East End of the metropolis was provided with a light department, equipped in every detail. Dr. Sequeira, the skin specialist at this hospital and in charge of the light department gave an address a few days ago on "Carbon-arc Light Baths in the Treatment of Lupus Vulgaris." In this address he stated with conviction that the value of this light concentrated on the diseased area was incontestable. The speaker said that he had inquired recently into the histories of a number of individuals treated by Einsen light before 1913. Of these, he came into touch with 132 and examined them carefully and was able to declare that "cures effected from ten to twenty-two years ago had been permanent, and this in spite of the failure of nutrition due to war conditions." Seventy per cent. of the patients belonged to this group. Eleven per cent. were temporarily cured but subject to slight recurrences. Sixteen per cent. derived benefit from the treatment but have never been freed from evidence of the disease, while three per cent. derived no benefit whatever from treatment. Other workers in the same direction, notably Reyn of Copenhagen, record similar results from their experiences. However, Reyn has gone further with the light treatment, and has supplemented the local treatment of lupus by general light baths given to the whole body, and this form of treatment has been so successful that his permanent cures have been raised to 90 per cent. of the whole. The principle of treatment is exactly the same as sunlight for joint or surgical tuberculosis in children, referred to previously and practiced with so great success by Rollier at Leysin and Gauvain at the Treloar Cripple Home at Alton near London and at Hayling Island. Last summer, Dr. Sequeira decided to follow Reyn's procedure and exposed those cases which were not favorably influenced by the local application of concentrated light, to light baths. In August last, a 25-ampere arc lamp was installed and later a 50-ampere arc lamp was obtained. Immediate improvement was observed. It may, however, be pointed out or rather Dr. Sequeira pointed out that the light bath is not intended to displace the Einsen light but to supplement it. It is of the highest value in improving the general nutrition. It promotes the absorption of

the diseased tissue in some at present unexplained way. In surgical tuberculosis the outcome is similar and it is said that extraordinarily good results have been obtained in the treatment of rickets by light baths. Thus it seems that summer sunlight can be simulated so closely by the carbon-arc lamp that the effects are to all intents identical so that it appears as if it is no longer necessary to go to places, the high Alps for instance, where natural light conditions are most favorable, as treatment can be carried on thruout the year irrespective of the sun. In such a manner does science, and perhaps, medical science especially, overcome natural obstacles.

Over-Population and Remedies Therefor.

Over-population is an outcome or it may not be too much to say a crime of civilization. It is not over-population in itself which wreaks the harm but the massing together of population in circumscribed areas. There is room and to spare in the country still, even with the high standard of living set by advanced civilization, but people will crowd into cities and towns. It is estimated that more than two-thirds of the inhabitants of Great Britain live in urban areas, while probably half, or in the neighborhood of half the population of America live or exist under similar conditions. Life in overcrowded places is not as healthy as in the country, and the life of the poor and very poor in cities is unhealthy, morally, mentally and physically, and moreover a menace to the entire community. Great Britain is over-populated for the very sufficient reason that possibly, under any conditions, she could not feed her people and, in existing circumstances, she can only feed a small proportion, and if agriculture is not assisted but allowed to "go under," omens seem to be pointing that way, matters in this respect will be very much worse. People interested in or who love their country are conscious that unless steps are taken to remedy the situation disaster must ensue. Even the politicians, and it takes an impending crisis to arouse them from their own selfish concerns and party politics, are beginning to be alarmed and are wondering what remedy will best meet the case or, at any rate, stave off for a time the reckoning.

Most of the politicians appear to be of the opinion that emigration to British Dominions on a large scale affords the most favorable means of relieving the congestion. In fact, measures have been taken already to send away to Australia, New Zealand and to other parts of the Empire, selected children and young people, whose passages will be paid and who will be "placed" on their arrival. However, it is pointed out by well-known economists that all big schemes to promote emigration cannot but fail, or in the long run do the race and the country more harm than good. In addition, the Labor Party here, which is now a power in the land, are bitterly opposed to the emigration of children, however well they may be cared for in the new country and however glowing their future may be there. They say, and who can gainsay the statement, that children should not be taken away from their parents, and that the chances that they may prosper is not sufficient reason for depriving them of parents' care at an age when they most need it and for depriving parents of their society. As for the emigration of adults on a wide scale, cogent and weighty arguments can be brought against it. The Dominions are eager and willing to take in British immigrants, but they also wish for the best. Those who are defective in any way, physically or menally, are not welcome, but the hardy and physically and mentally efficient are the very kind of people we can least spare. In our cities and towns we have now too many by far of incompetents, by breeding and environment. The fit in body and mind we need in this country and if these are drained from it we shall be in a worse state than before. This is the argument of those who have studied and know the subject and is absolutely true, and this brings me to a remedy which has been much discussed in Great Britain recently. The remedy referred to is that of birth-control. In the issue of AMERICAN MEDICINE for October last was an editorial in which attention was drawn to a fact which is not sufficiently considered in all its bearings, namely, that population is not an index of national virility or to put it in other words, quality is of more importance than quantity. The menacing aspect of the population question in all civilized countries is that quantity is overwhelming quality, and

this remark applies with greater force to Great Britain than to any other country, because a larger proportion of her population lives in crowded areas under conditions manifestly inimical to healthful life. Further, these are the ones who have the largest families, and it will be found, more often than not, that the poorer the people and the lower the scale of intelligence and physical excellence, the bigger families they will have. Also their children will be reared and brought up under conditions which ill fit them or unfit them to become of value or use to the community or nation. On the other hand, those who on account of their physical and mental attributes should produce many children, as a rule, have very few, perhaps, one or two. Thus civilization is faced with the appalling prospect of retrograding to an incredible extent, because of the survival of the unfit instead of the fit. It is said by some distinguished men here, several of whom are well-known physicians and surgeons, that birth-control might be found to be, if not a complete, at least a partial remedy for over-population. It is undoubtedly carried on among the upper and middle classes, it is the exception rather than the rule nowadays to see large upper or middle class families, and at the present time it is the poor, not only in pocket but frequently in physique and brains who reproduce freely and people the earth. Of course, the arguments against birth-control are strong too and the writer of this letter is merely recapitulating the views of its advocates in Great Britain and is neither commanding nor condemning the practice. It is, however, painfully obvious that over-population is a problem which demands attention and it is likewise certain that the undesirable members of the community are increasing in numbers at a rate which gives one to think furiously.

New Drink Legislation.

By a very large majority of votes the House of Commons agreed on March 9th to last to a Bill, the object of which is to raise to eighteen the age at which young persons can be served with intoxicating liquor on licensed premises. The law now prohibits young persons under sixteen from being served with spirits. Your country-

woman, Lady Astor, who is an ardent, almost a rampant, supporter of prohibition introduced the Bill in a witty speech. Lady Astor said in part that the Bill was introduced two years ago by the late Lord Bryce, and it had behind him the teachers and chief medical authorities in the country. A letter in favor of it appeared in the *Times* signed by some of the chief figures in the medical profession. It had the support of the *Lancet* and the *British Medical Journal*. She had personally received seven hundred letters from medical women approving of it. Lady Astor pointed out that at the present time a publican could sell beer to a child of fourteen for consumption in his public house, as well as to be taken away. This Bill proposed to make it illegal to sell to anyone apparently under eighteen any kind of intoxicant for consumption in a public house. Another speaker, Mr. C. W. Crooks, said that unless those who were interested in the sale of liquor took more notice of public opinion, they would bring England to the same state as the lack of care on the part of saloon keepers had produced in the United States. Mr. W. A. Jenkins pointed out that there were only two classes in America at present, those who still had a little and those who had a little still. Altho the Bill has been introduced and received a great deal of support, it will have the general support of the Labor Party, this does not mean that it will be passed. In fact, the Home Secretary said that the Government could not promise to give any facilities for the passage of the Bill. He declared that insobriety among young people was on the decrease and that the proper direction of reform, in his opinion, was to reform the atmosphere of public houses. It may be said without reserve that the atmosphere of the public houses needs a great deal of reform and it would be in the best interests of health, bodily and spiritual, if drastic reforms were carried out. While prohibition is not in sight, indeed is not likely to come into force here, the temperance party is increasing in strength, and if supported by the Labor Party is a power which cannot be overlooked. There are many different versions as to the effect of prohibition in your country. By some Englishmen, and by one well-known British medical man in particular who has visited America and Canada recently, prohibition is hailed as the

salvation of the country. It is stated that since it became law, health and morals have improved beyond belief and that the working powers of the population have been so increased that it is impossible for a country in which no prohibitive laws have been passed, to compete with the American worker in any branch of industry or profession. According to these enthusiasts, prohibition has ushered in an era of health and prosperity unexcelled in any former period. Those who are opposed to prohibition tell a very different tale. They say that strong drink can be obtained but at a high cost and generally of an inferior quality. The law is evaded in every way, and these evasions are winked at as a rule. Persons who have always been strictly moderate drinkers resent the check on their freedom of action, and determine to obtain drink at whatever trouble or cost. It is stated that drunkenness is as frequent as formerly, narcotic drugs are more greatly used and that taking all into consideration, prohibition has done more harm than good from every point of view. It would be most instructive if some of your readers would give their opinions on the subject, altho perhaps it is so controversial a question that opinions would vary, almost as much as those of the British visitors, who have written on it, and a discussion thereon might be too stormy for the pages of a sober medical journal. It seems probable that supporters of one side or other are too prejudiced, or it might be more polite to say, too earnest in their views to argue logically or calmly. The drink question appears to make fanatics as greatly as religion, and temperance people, while sober themselves, seldom argue with sobriety. It may be said that the good or bad effects of strong drink have not been decided yet. It is known that excess is harmful, and that its value as a medicine, to put it mildly, is extremely doubtful, and it may be that drinking only in moderation is injurious. But it is also doubtful, and this is the belief of many shrewd and sane persons here, that it was not wise to force prohibition suddenly down the throats of the American people. Temperance is excellent, and perhaps total abstinence is, but it seems to be a misguided policy to compel by law to a nation to practice total abstinence.

The Use of Radium.

Radium has advanced in the estimation of those best able to judge, as a therapeutic agent during the past few years. The London Radium Institute has just issued its report for the year 1922, and it provides very satisfactory reading. The greater part of the report is written by Mr. Hayward Pinch, who is in charge of the Institute and is concerned with the methods employed there for treating diseases of the alimentary canal and its accessory glands. Diseases which can be satisfactorily treated by radium therapy—it does not follow that they can be cured—are tabulated as follows: Fordyce's disease of the lips, epithelioma of the lip. It is stated that radium therapy should be confined to the treatment of inoperable cases, or of cases in which operation has been refused. It is stated further that great benefit is often obtained in such cases. Leucoplakia of the cheeks, chronic superficial glossitis, carcinoma of the tongue, chronic hypertrophy of the tonsils, epithelioma and sarcoma of the tonsil, sarcoma of the tonsil. Other diseases of which the treatment by radium is less satisfactory are given. Dr. J. C. Mottram contributes to the report short summaries of papers written during the year in which are traced relationships between radiation, vitamin A and B deficiency, and the known blood changes. The great advance made in radium therapy was the burying of screened tubes in growth, and in this connection it may be pointed out that it was owing to American recognition of the possibilities of burying small, unscreened glass tubes in tumors rendered it feasible to make use of Beta-rays in this manner. By this means certain cancerous conditions as carcinoma of the mouth, may be treated with justifiable hope of improvement. Of course, radium has proved of great value to the surgeon, both before and after operation. Moreover, it must not be forgotten that radium exerts an indirect influence in the treatment of malignant disease. The value of the Beta-ray deep seated in the treatment of tumors largely led to the establishment of the new technic for deep X-ray treatment. However, the fact is often neglected that it is not only in the treatment of malignant disease that radium is a useful therapeutic agent, but in the treatment of other condi-

tions. Dr. W. H. Aikins, the head of the Radium Institute of Toronto, on several occasions has drawn attention to the successful treatment by radium of benign tumors, goiters and various conditions. Dr. Aikins is especially enthusiastic with regard to radium therapy in the treatment of goiter and in the *Canadian Medical Association Journal*, February last, gives his and his co-workers' experiences at Toronto in this direction and also quotes other authorities who have had similar successful results in the treatment of goiter. In his letter to the *Canadian Journal*, Dr. Aikins emphasizes a point which is generally passed over, namely the application of radium to cases of toxic or exophthalmic goiter that are bad surgical risks. He is of the opinion that in these particular cases the application of radium has perhaps its best fields, for the patient may be brought back to a condition in which operative procedure may, if necessary, be safely undertaken. Dr. Aikins holds that radium by itself can secure a permanent cure in a considerable number of cases of toxic or exophthalmic goiter. There is yet another point worthy of notice with respect to radium therapy and that is that X-ray and radium treatment in the future will probably be combined. One obstacle against the widespread employment of radium is its scarcity.

New Minister of Health.

Owing to the disinclination of the electors of two or three constituencies to vote into Parliament Sir A. Griffith Boscawen, who held a Cabinet post in the late Government and was transferred by the present Prime Minister to the Ministry of Health, it has been necessary to find a new Minister of Health. Mr. Neville Chamberlain, son of the great Joseph Chamberlain and brother of Austin Chamberlain, now occupies the post. It is distinctly a thorny one. Within its province comes the housing question, concerning which so much discussion is now raging, and which if not settled to suit the public, may overturn the Government. Mr. Chamberlain is well equipped for the position as he has followed in his distinguished father's footsteps and interested himself in the municipal affairs of Birmingham, the second city of England in point of population.



Treatment of Psoriasis Vulgaris with Thymus Extract.—Gross (*Deutsche medizinische Wochenschrift*, September 8, 1922) presents a preliminary description of his success in treating psoriasis with thymus extract. He gave intramuscular injections of thymus extract into the buttocks every other day. He began with 1 c. c. doses (1 gm. of thymus), and increased up to 6 c. c. (6 gm. of thymus). Later stronger extracts, 2 gm. of thymus to 1 c. c., and even 5 gm. to 1 c. c. were employed. For treatment he chose severe, stubborn cases. After the first few injections it was observable that the manifestations retrogressed markedly. Hard, raised infiltrations became paler and softer, and flattened out more and more, finally disappearing. Only one patient complained of a slight headache on the day of the injection. From 8 to 14 injections, or about 20 to 30 gm. of thymus, were required to cause the eruption to disappear. It remains to be seen whether the cure will be permanent. The trials of the remedy are being continued.

Endocrine Imbalance and Mental Deficiency.—Eight hundred and forty-nine cases of mental deficiency are considered by Potter (*Journal of Nervous and Mental Diseases*, October, 1922) from an endocrinologic standpoint. Of this number 314, or 37 per cent., showed evidence of some type of endocrinopathy. The average chronologic age of this 37 per cent. was 15 years, the intellectual age, $6\frac{1}{2}$ years, and the percentage of normal intelligence was 43. It was possible to classify these cases into eleven different groups. Each of these groups showed a uniform appearance of a certain combination of findings which have previously been observed in conjunction with known disorders of the endocrine glands, and hence they were termed accordingly. The cases showed evidence of a pathologic physiology chiefly of three glands; namely, in order of occurrence, the pituitary, the thymus and the thyroid. One

hundred and sixty cases showed evidence of a disturbed pituitary function. In two-fifths of these the dysfunction was primary. In the remaining three-fifths there was a hyperactivity of the pituitary, probably as a compensatory reaction to an initial defect in one or more of the other glands of internal secretion. One hundred and thirty-three cases were of status lymphaticus type. One-half of these showed no evidence of a defect elsewhere in the endocrine system, two-fifths showed signs of a pituitary overactivity and one-tenth were accompanied by a condition of hyperthyroidism. Ninety-nine cases had characteristics of a thyroid dysfunction. All but one-twelfth of these seemed to have a condition indicating an underactivity of the thyroid, half of which were accompanied by a status lymphaticus or had symptoms pointing to a compensatory pituitary overactivity. In only eleven cases did there seem to be a suprarenal complex present. In all of these the fault seemed to be in a reduction of function, involving the cortex as well as the medulla. It is interesting to note that there was evidence of pituitary overactivity, probably in the nature of a compensation, in each of these cases.

tumor of the pituitary is combined with a goiter or symptoms of hypothyroidism, thyroid tablets may improve the pituitary condition, and even the hemianopia may be favorably influenced. Dementia praecox is a group of diseases. The use of thyroid and sex gland has sometimes a favorable influence in the early stages of the hebephrenic type. Yet one should not forget in considering hypofunction and hyperfunction of glands that qualitative changes (dysfunction) are possible. Complete recovery followed this treatment only in girls in whom the psychosis started at puberty and sex development had been arrested in the infantile stage. Similar good results were obtained in nervous girls with hypoplastic uterus who started to menstruate very late. Tics of the pubertal age were also favorably influenced.

The Balance of the Endocrines.—

Writing on the subject of endocrine balance in a recent issue of the *Journal of the Missouri State Medical Association*, Sands states that the thyroparathyroid, the pituitary and adrenals are considered the vital endocrines because extirpation of any one of these glands results in death. The thyroid has more to do with normal development and the maintenance of health, both physically and mentally, than any other one gland. Its hypofunction or absence of function in infancy or childhood is the cause of cretinism. Its destruction by disease or operation in the adult causes myxedema. Its hyperfunction or overactivity results in Graves' or Basedow's disease. This is the keystone endocrine, as in a measure it controls all the other internal secretions. The normal action of the hypophysis or pituitary is to promote skeletal growth and mental and genital development and metabolism—that is, the pituitary gland is composed of two lobes, posterior and anterior, having different functions. Giantism is often the result of hyperpituitarism or overaction of this gland. Dwarfism results from underaction of this gland. As the secretion of the posterior lobe is concerned largely with metabolism and especially the metabolism of sugar, hypopituitarism or underaction of this lobe in the child results in high sugar tolerance and the accumulation of fat over the entire body, as seen in many of the unusually fat chil-

Hyperesthesia of Thyroid Region.—Lian (*Bulletin de la Société Médicale des Hôpitaux*, Paris, January 12, 1923) discusses his experiences with the sign described by him in 1918. It is necessary to avoid all suggestion, and to estimate the extent of hyperesthesia by merely observing the face of the patient. The point of a pin is drawn along the skin of the neck, very lightly pricking the skin. He does this on suspicion of exophthalmic goiter before he mentions the thyroid or attracts attention to it. This sign is not found very frequently, but it is reliable if it is distinctly present over the thyroid as a whole or over the isthmus or one lobe. It may be a special form of what Mackenzie calls viscerosensory reflexes.

Organotherapy in Neuroses and Psychoses.—Wagner-Jauregg (*Wiener klinische Wochenschrift*, January 4, 1923) recommends thyroid treatment in every case of retarded development of children. If a

dren we often observe. In the adult the same hypofunction produces the condition known as dystrophyadiposo-genitalis. Hyperpituitarism in the child produces gigantism; in the adult after the epiphyses have united with the shaft of the long bones and skeletal growth is completed, acromegaly results. Pituitrin is the product of the posterior lobe of the hypophysis. The adrenal secretion presides over the tonicity of the involuntary muscles. Hypoadrenia causes myasthenia, general weakness and lowered blood-pressure.

The scope of this paper will not admit of going into the details of the other and minor endocrines.

In closing, Sands says that the practical application of a knowledge of endocrinology is in the use of organotherapy or the use of the products of the glands of internal secretion in the treatment and relief of ailments due to deficiency or overproduction of these glands, whereby we may restore endocrine balance, and so in part fulfil the mission of medicine; to relieve pain and suffering, restore health and prolong life.

Organotherapeutic Action of Milk.—Cassouët (*Bulletin de l'Academie de Médecine*, Paris, December 12, 1922) points to the fact that symptoms of cretinism do not develop as long as the infant is nursed, and believes therefore that an important part of the value of unsterilized milk is a combination of the fresh products of all the endocrine glands.

General Endocrine Symptoms.—Sézary (*Presse Médicale*, Paris, December 9, 1922) draws attention to symptoms which may be due to troubles of different glands. These general endocrine symptoms often cause uniglandular affection to be considered as pluriglandular. For instance, the increased tonus of the sympathetic in exophthalmic goiter may lead to a suspicion of increased action of suprarenals, and a lowered action of the same glands may be suspected because of the frequent asthenia and pigmentation. Other glands have been also incriminated in exophthalmic goiter. The question is whether the affection of the

thyroid alone cannot explain all of these symptoms. The correlated action of the gland is a fact, and there is not sufficient ground to assume a pluriglandular affection. Melanoderma may occur in hepatic insufficiency, exophthalmic goiter, tumors of the pituitary, and affections of ovaries and testicles, without histologic changes in the suprarenals. Asthenia is another general endocrine symptom. Obesity can originate in affections of many glands. Amyotrophy, infantilism and virilism have various causes. The general endocrine symptoms explain cases of supposed pluriglandular affections without corresponding histologic findings.

The Emergency Function of the Suprarenals.—The hope that, with the discovery of an "active principle" in the suprarenal tissues, the physiologic function of these structures would be speedily elucidated has not justified itself, as an editorial writer in the *Journal of the American Medical Association* (April 7, 1923) very properly states. Despite the profound pharmacologic potency of epinephrin, it has not been possible to demonstrate conclusively that this "hormone" plays an important part in the every-day performances of the living organism. At any rate, the thesis that the secretion of epinephrin into the circulation is the determining factor in the maintenance of vigorous blood-pressure has not substantiated itself, so that the suprarenal glands cannot be looked on as the preeminent regulators of vasomotor tone. Some of the more recent writers have even gone so far as to deny to epinephrin any action comparable with that of a true "internal secretion," and to place it in the category of excretory substances without routine physiologic effects. In this country there has been a lively debate as to whether epinephrin is an agent in the mobilization of energy in times of stress. The latest contribution to the subject from the University of Buffalo supports the general conclusion that strong stimulation of many varieties—reactions such as are likely to rise in difficult situations or unusual environmental conditions—increases the discharge of epinephrin into the circulation. The evidence has been secured by observations of the reaction of the denervated iris, which Meltzer showed

to be particularly sensitive to epinephrin. The responses elicited with various types of stimuli fail when the suprarenals are eliminated. The evidence for the "emergency" function of the suprarenals has been strengthened by these findings.



By-ways and High-ways

Strange Beliefs of Ye Olden Time.— "Having recently browsed among the old records of the New England States and New York," writes Dr. W. H. Morse of Hartford, Conn., "I have been interested in the account of several matters which are of peculiar interest."

In 1647 "an epidemic sickness passed over the American colonies, which affected the colonists and the natives, English, French and Dutch. It began with a cold, and in many cases was accompanied with a slight fever. Such as were bled or used cooling drinks died, but such as made use of cordials and more strengthening things recovered for the most part. It extended into the West Indies, and there died in Barbadoes and St. Kitts 5,000 to 6,000 in each place."

The summer of 1703 "was remarkable for an uncommon mortality which prevailed in the city of New York, and distinguished by the name of the Great Sickness, made the Grand Epoch among the inhabitants. The fever did kill off almost every patient seized with it, and was brought in a vessel from St. Thomas in the West Indies, an island remarkable for its contagious diseases."

In the summer of 1709 a body of troops intended for the invasion of Canada, encamped near Wood Creek, New York, when "they were attacked with a distemper which made dreadful havoc, and obliged them to decamp. Some of the men died as if they had been poisoned."

In 1716 Albany was visited with a "malignant disease," which Dr. Colden called a nervous fever, and Dr. Douglass called yellow fever. "The bodies of some of the patients were yellow. The crisis of the dis-

ease was the ninth day; if a patient survived that day he had a good chance of recovery. The disease left many in a state of imbecility of mind, approaching to childishness or idiocy, while others were afterwards troubled with sore legs. The disease began in August and ended with frost, and carried off forty or forty-five inhabitants, mostly men of robust bodies. It was said to be imported."

In November, 1760, in the small town of Bethlehem, Conn., "thirty-four persons died of a kind of fever. The disease was extremely violent, terminating on the third or fourth day. During the sickness a flock of eleven quails flew over the chimney of a house in which were several diseased persons; the quails all dropped in the garden, three arose and flew into the bushes, but the others were picked up dead."

"The summer of 1763 was a moist and unkindly season. In August the Indians on Nantucket were attacked by the bilious plague, and between that and February following, their number was reduced from 358 to 136. Of 258 who were attacked, 36 only recovered. The disease began with high fever, and ended with typhus in about nine days. It appeared to be infectious among the Indians only; for no whites were attacked, altho they associated freely with the diseased. Persons of a mixed blood were attacked, but recovered. Not one died except of pure Indian blood. In December of the same year the Indians of Martha's Vineyard, eight leagues distant from Nantucket, were invaded by a like fever; not a family escaped, and of 52 patients, 39 died."

It was quite commonly believed that the weather had a great deal to do with the "distempers," "pestilences" and "great sickness."

In 1658, and again in 1662, New England experienced "terrible earthquakes." The summer of the first-named year was very rainy, while that of 1662 was notable for a drouth, when small rivers and streams became dry, "and waters were tinctured with the taste of sulphur." In both years "malignant diseases made their appearance extendedly."

"In 1688 a comet appeared with a stupendous tail. This appearance was attended with an excessive hot summer, and malignant diseases. In New York the epidemic

was so fatal that a fast was appointed on that account in September."

"On December 11, 1719, was the first recorded appearance of Northern Lights in America. They were remarkably bright, and as people in general had never heard of such a phenomenon, they were extremely alarmed with apprehension of the final judgment; and all amusements, all business, and all sleep was interrupted. Immediately there was a general apprehension of destruction and death, and many who had very little sense of religion before this, appeared at the time to be very devout penitents. Their nerves were shaken up greatly, and the so-called Saint Anthony's fire broke out, caused by that fearful sight up in the northern heavens."

In Hinsdale, N. H., in 1752, there was a volcanic eruption. This is told by the veracious and versatile Dr. Dwight, who says that "from out of the West River Mountain the fire erupted, accompanied by a loud noise that resembled the booming of a cannon. A hole was found about six inches in diameter, and a pine tree which stood near this hole was covered with a black mineral substance that had been forced up out of the hole, which consisted chiefly of calcined and melted iron ore, strongly resembling the scoria of a blacksmith's forge." Not strangely, this "volcanic eruption" in the well-behaved colony of New Hampshire "set to sneezing many people, making a condition like a hard cold coming on."

In 1762 appeared a comet, "and the heat and drouth exceeded anything ever known before. In all the eastern part of the country there was no rain from June until the 22nd of September. The forest trees appeared as if they had been scorched. The springs dried up, and the distress that was occasioned by the actual want of water was extreme. In consequence there was a great deal of sickness. The ensuing winter was very severe, and again the people suffered from much sickness. As was to be expected, the comet was the occasion of these outbreaks."

In 1770, the same year when India was afflicted with "clouds of flies," and a pestilence ravaged portions of Europe, "multitudes of black worms, about one inch and one-half in length, were generated in the northern part of America, and almost cov-

ered two or three hundred square miles of land. They all moved in nearly one direction, and devoured the grain and grass. No account could be given of their origin. They disappeared all of a sudden at the close of June or the beginning of July. Following this strange invasion, both men and cattle suffered much from bowel disease."

In 1775 the oysters in Wellfleet harbor, Cape Cod, perished, and at the same time the oysters on the shores of Connecticut were also in an unhealthy condition. After this, for some time when oysters were eaten, violent vomiting followed. The following year all the lobsters in the vicinity of York Island disappeared. This was generally ascribed to the firing of cannon. This lack of lobsters does not seem to have been the cause of sickness, but in 1788, the codfish taken on the Newfoundland banks were thin, "and when cured they were the means of causing sickness to some extent when partaken."

In 1789 the northern states experienced that which was commonly called a dearth. "In Vermont people were reduced to the extremity of feeding upon tadpoles boiled with wheat straw. Four potatoes were sold for a shilling. None of the human race were actually starved to death, but a few died of a flux in consequence of the bad diet. Cattle, however, perished in considerable numbers."

On the 16th of May, 1790, at half-past ten in the evening, "a strange rattling sort of sound was heard in various, if not all parts of New England, and immediately there was an extensive earthquake. It seemed to proceed from the northwest and to pass along off to the southeast. On the morning after this earthquake, at Middletown in Connecticut, a substance that resembled honey or butter covered the grass to a considerable extent. Where this was found in the pastures, the cows instinctively refused to graze. It is thought by those who are competent to judge, that if the animals had partaken of the grass that was thus affected, their milk might have bred up a disasterful pestilence."

We may smile at earthquakes, canker-worm invasions, and summer drouths being the cause of "pestilences" and "strange dis-tempers," but in our day, with knowledge of germs and atmospheric distractions, we have to admit, as the excellent old Dr. Dwight

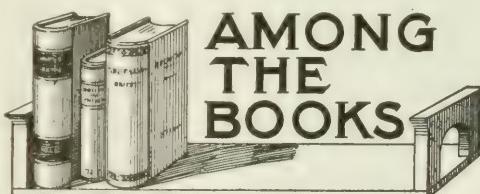
would say, that "there is a good deal in such beliefs, after all."

The Growing Scarcity of Rural Doctors.—"I have been greatly interested in the articles taking the rounds in the medical journals relative to the growing scarcity of doctors in the rural districts of the country," says Dr. J. H. Souther in the *Kentucky Medical Journal* July, 1922). "It seems to me that the condition is quite general and will become more so as time goes on. Not only in the remote sections of our country, but in the densely populated sections are conditions becoming serious in this regard. There is certainly a cause for this condition that but few of the writers have ventured to give, and none have suggested a remedy. To my mind the cause is quite apparent and is couched in the one sentence, to wit: Centralization of the profession in the hands of the rich, who alone are financially able to meet the requirements of the American Medical Association, who seem restless and want to add more time and money to the curriculum, which is already beyond the means of the poor worthy young man who has aspirations for the study of medicine, and even to the more fortunate it is sufficient to divert his aspirations to another avocation. You are all apprised of the prerequisites required of the young man on matriculating. These, together with the great outlay of time and money are, in my opinion, the principal cause of the depletion in the ranks of the profession and answers the question why there is only 173 matriculated in our colleges this year, a fall off of 60% from twenty years ago, and those that are fortunate to graduate will not locate in small towns or rural districts, as they are so highly trained they are inclined to specialize, and the small towns or country offer but little opportunity to succeed in practicing their profession.

"Higher education is very desirable for the profession, but I think it can be overdone. There is a tendency for the standard to be raised still higher, which I think is uncalled for, but rather there should be allowed medical colleges that would be permitted to grant degrees, say of forty years ago, at which time the graduates proved to be as competent in the treatment of diseases

as those of the present day. Tho less scientific, I admit, but so much the better for the patient in many instances.

"The government during the war emergency relaxed their rigid rules of requirements for eligibility for appointment to the army medical service and we now have as great a need, one that will become more and more prevalent, that affects the vital welfare of our nation. Then why shouldn't there be some method adopted whereby these rural communities may be supplied with physicians. Let me again repeat, I am not objecting to high medical attainment, but I do think it a mistake to require all medical colleges to conform to one standard. Let there be colleges of the highest standard, where the young man of means may have the privilege of attending, who will be fitted as a consultant for obscure cases that the rural physician cannot care for. A large majority of the cases in general practice are simple and can easily be cared for by one who has not a thoro scientific knowledge of medicine. Theory must be reduced to practice in order to succeed, and at the bedside is where it is accomplished."



A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES.¹

An extensive description of a work of this nature is hardly necessary since in its various editions it has been before the medical profession for nearly forty years and is familiar to thousands of medical practitioners, and having received a verdict of approval in its previous editions, does not require much commendation from us. The closing volume of the third edition was published in 1917, but altho so short a time has

¹A Reference Handbook of the Medical Sciences, embracing the entire range of Scientific and Practical Medicine and Allied Sciences, by various writers. Fourth edition. Edited by Thomas Lathrop Stedman, A. M., M. D. Complete in eight volumes. New York, William Wood and Company, 1923.

passed, it was deemed advisable to issue a fourth edition in order to bring the work thoroly up to date and incorporate the new material which the experience of the war had made necessary. This fourth edition follows closely the third, many of the articles, however, having been revised. The bulk of the new material has been placed in the eighth volume.

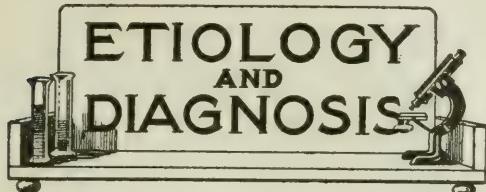
Among the new articles on subjects brought out prominently by the war experience we find War Gas Poisoning, by Dr. Frank P. Underhill, of Yale University; Trench Fever, by Dr. M. I. Samuel, of Wilmington, Dela.; War Neurosis (Shell Shock), by Dr. James K. Davis, of New York; Medical Aspects of Aviation, by Lieut. Neuberger, of the United States Navy. Articles on the Army, Navy, and Public Health Service have been thoroly revised to meet the changing conditions in these services. Among these articles are the Army Medical Department, by Col. J. R. Kean; Army Medical Service in Campaign, by Major A. D. Tuttle; Naval Medical Service, by Lieut. Com. L. W. Johnson; Hospital Ships, by Com. Richmond C. Holcomb, United States Navy. The article on Gun Shot Wounds, written for the third edition by the late Col. La Garde, has been entirely rewritten in the light of recent experience by Dr. R. B. Pratt, of Bellefontaine, Ohio, who served in the Medical Service during the war in France. Among other new articles are one on Asthma, by Dr. Spingarn, of Brooklyn; the Schick Reaction, by Dr. W. H. Park, of the New York City Board of Health; Encephalitis Lethargica, by Dr. John E. Lind, of Saint Elizabeth's Hospital, Washington; Tularemia (Deer-fly malady), by Surgeon Edward Francis, of the Public Health Service, who was the discoverer of this disease; Organotherapy, by Dr. Blumgarten, of the Mt. Sinai Medical Service, New York; Violet Ray Therapy, by Dr. A. J. Pacini, formerly of the U. S. Public Health Service; Alastrim, by Dr. W. C. Rucker, Chief Quarantine Officer, U. S. Canal Zone; State Medical Licensure, by Dr. William B. Cutler; Basal Metabolism, by Dr. W. P. Anderton, of New York City; and Antiseptic Treatment of Wounds, by Dr. J. G. Sherrill, of Louisville. Among minor additions we may mention apothesine, barbital, benzyl, benzoate, butyn, crataegus, libradol,

protein therapy, colloidal gold reaction, Sachs-Georgi reaction, sigma reaction, soldiers' big belly, irritable heart of soldiers, trench foot, trench shin, fluidglycerita, etc. There are also biographical sketches of Dr. Buck, editor of the first and second editions of the Reference Handbook, Drs. Abraham Jacobi, Theodore Janeway, George M. Gould, Sir William Osler, and Stephen Smith. The *materia medica* articles have been revised to conform with the latest editions of the U. S. Pharmacopeia and the National Formulary, and the statistics of population in the 1920 census have been incorporated in the climatological articles.

Among the articles which have undergone more or less extensive revision we note Diphtheria, Immunity, Yellow Fever, Food and Drug Control Laws, Beriberi, Paralysis Agitans, Pellagra, Scurvy, Radiotherapy, Radio Activity, Rickets, Narcotic Drug Legislation, Workmen's Compensation Laws, Quarantine, Plague, Typhoid Fever, the U. S. Public Health Service, Edema, Yaws, Trypanosomiasis, International Congresses, the American Medical Association, Gout, Coroner, and Death Certificates.

We have noted here only a few of the changes in this new edition, but have said nothing regarding the work as a whole. The term handbook might give a wrong impression to one who had never seen this medical encyclopedia. It consists of eight imperial octavo volumes with a total of 7,320 double-column pages, over 5,000 illustrations, and contains 3,914 authoritative signed articles of varying lengths on almost every conceivable subject connected with the science of medicine. Most of these articles are written by men of wide experience in their special lines. Just by the way, it is interesting to note that all of the 445 contributors are American or Canadian. The amount of extremely valuable professional information contained in the work is so extensive that, literally, no physician's library can be accounted complete that does not contain it.

The Medical Profession Never in a Stronger Position.—The medical profession is in a stronger position today, before the public, than it has ever been, and I believe it is in process of rapidly strengthening that position.—*Mr. John G. Bowman, Chancellor, University of Pittsburgh.*



Diagnosis of Pneumonia.—The diagnosis of bronchopneumonia contrary to the statement of some text-books is not always an easy matter, states Pritchett in the *Kentucky Medical Journal* (February, 1923); in fact frequently is it a very difficult task to differentiate between this and some of the following: Bronchitis, lobar pneumonia, appendicitis, pyelitis and tuberculosis. The fact should be emphasized that often physical signs will be of little aid in diagnosis; however, even without these signs there often exists several of the following: Fever, overaction of the ala nasi, rapid respiratory effort with a pause at the end of each inspiration, the so-called inspiratory grunt and a rapid pulse. Let us discuss some of the most common and important symptoms. An infant or child has been ill two or three days with a rhinitis or bronchitis, or possibly just in the midst of convalescence from some contagious disease, suddenly or gradually the symptoms increase in severity, there is cough which is dry, hard and unproductive at first and evidently causing the child pain, the temperature increases and may be 105 or so and remittent, the pulse is much accelerated, possibly 150, the respiratory rate increases and may be 50 or 60 or at the rate of one, two or three with the pulse rate. There is prostration, there is lividity or cyanosis which may be marked. The facial expression is dull and the child may be oblivious to his surroundings, this is in contrast to the lobar type. There are times when the child seems better for a while only to relapse into lethargy, the appetite is poor. There is asthenia, the course is ill defined, may last two to three weeks, ending by lysis.

The above portrays an average case. On the other hand, the onset may be very sudden and severe, with extreme toxemia, labored and difficult respiration, and the child literally drowning in his own secretion. Fortunately, these cases are rare; again we see cases which we suspect as bronchopneumonia, but there are no definite symptoms or physical signs for several days.

For the most part, drugs play a secondary rôle in the treatment of bronchopneumonia. In case the temperature causes nervous symptoms, hydrotherapy in the form of cold pack, tepid sponge and ice cap serve us best.

For cough, small doses of codein are of value. The routine use of expectorants, especially early is poor therapy. The restlessness and delirium are best controlled by hydrotherapy bromides.

Atropine sulphate is indicated in cyanosis and when there is much secretion in the bronchioles. Watch the heart; when there is evidence of distress stimulants may be neces-

sary. Here again the mustard is of value in the form of packs, also small doses of strophanthus and if more vigorous and quick action is needed, hypodermic use of atropine strophanthus or camphor in oil. Porter recommends that when cardiac failure seems eminent, due to dilation of the right heart, venesection is a life-saving measure. We should not hesitate to use hypodermic medication when indicated; ammonium and iodide preparations used judiciously are valuable in resolution.

In the stage of convalescence, cod liver oil, syrup of iodide of iron and syrup of hydriodic acid are indicated, bitter tonics are often of benefit. Often change of climate is of marked value. The above mentioned measures are but simply an armamentarium from which we may draw as judgment directs.

The Significance of Retinal Hemorrhages.—The following conclusions concerning the significance of retinal hemorrhages are advanced by Hawthorne (*British Med. Jour.*, September 16, 1922):

1. Retinal hemorrhages may exist without recognized prejudice to vision, and ophthalmoscopic examination is, therefore, a necessary part of every clinical examination.

2. Such hemorrhages may be the first objective signs of serious disease, and a discovery of them, therefore, demands a complete examination of the patient.

3. The recognition of retinal hemorrhage is often of high value in directing the observer to a correct interpretation of the clinical facts, while the prognostic significance of the observation *per se* is indeterminate.

4. Retinal hemorrhages do occasionally exist as isolated clinical facts, and when so existing are comparable to hemorrhages in other parts of the body (hematemesis, hematuria, hemoptysis, etc.), for which no ready explanation is at hand.

The Rational Attitude Towards the X-rays in Diagnosing Digestive Diseases.—The recent death of Roentgen should not make us oblivious to the fact that his epoch-making discovery has been distinctly a two-edged sword in the digestive field. Dr. Thomas R. Brown of Baltimore (*International Clinics*, March, 1923) believes that in the case of a great many physicians, the X-rays have consciously or unconsciously persuaded them to be much less thorough in their careful analysis of the case and in their clinical studies, and this, we feel, is very deplorable, because from X-ray studies alone diagnosis should not, and in many cases cannot, be made. It is to Dr. Brown peculiarly distressing to see a diagnosis founded on very careful clinical study of the case overthrown by a few words from a radiologist, who often is untrained clinically and only too frequently has not had a broad experience in reading X-ray plates. While it is obviously easy to fluoroscope a patient and to take X-ray plates, nothing is more difficult than to explain the pictures on the

screen, or to interpret the abnormalities of form or position as manifested in the plates. "I would rather," said recently a celebrated Italian internist, "have no X-ray examination in a case than X-ray plates interpreted by anyone other than a master in this field." To regard the X-ray as the court of last resort in diagnosis is fundamentally wrong except in gross conditions which can, in the majority of cases, be diagnosed just as definitely by other means. Except in such cases the X-ray diagnosis can rarely be definite—should only suggest various possibilities, the probability of which must be dependent upon other features of the case, as determined by careful history taking, a thorough clinical examination, and the use of various special tests. The X-ray is but one of many means of reaching a diagnosis, none of which except in occasional instances is capable of furnishing the diagnosis *per se*, but each of which should be used in proper proportion in reaching a probable or, in rare instances, an absolute diagnosis. To show the difficulty even in the hands of experts, Dr. Brown suggests the advisability of having the same case studied under exactly the same conditions by various radiologists. In certain cases all will agree on the diagnosis. These, as a rule, are the easy cases, diagnosable by other means; but in a considerable proportion of cases very different diagnoses will be furnished by different men, all honest, all experienced, all capable in this field. The pictures are definite, the images on the screen are definite, but the interpretation always is a question of subjectivity, and must differ unless the picture is perfectly obvious.

Cardiac Pains.—Hay in the *Lancet* for May 6, 1922, asserts that all forms of cardiac pain are in essence of the same nature, the varying in degree. It is not evidence of any particular variety of pathologic condition, but rather an indication of functional disability. Too much attention must not be given to the pathology. In fatal angina pectoris, the heart may show no evidence of either coronary disease or changes in the aorta, valves, or myocardium. The degree of pain is no indication of the extent of the actual disease. It is very important to determine whether a pain about the thorax or epigastrium is cardiac in origin or not, but this is not always easy. The classification of cardiac pain into submammary and supramammary does not hold with any degree of certainty, altho the supramammary is the more ominous type. It should be remembered that visceral distress reaches consciousness indirectly, the related segments being excited, and pain is felt in the areas of the correlated cerebrospinal nerves. Altho anginal pain is more usually left-sided, it may be most marked to the right of the middle line, extending to the right arm. In typical attacks of angina pectoris the combination of anguish and sense of imminent death cannot be mistaken, but in the atypical forms, especially when the symptoms are slight, the initial warnings may be mistaken for indigestion or rheumatism and neuritis.



After Tonsil Operations.—Immediately after operation, says Hays (*Med. Times*, April, 1923), the patient still being under the anesthetic, ice cloths should be applied to the neck and these should be kept on continuously for the first twenty-four hours if they do not inconvenience the patient. The ice cloth reduces the inflammatory reaction in the throat and controls hemorrhage. However, if the cloths are particularly irritating (and this is often so in young children) they must be abandoned because the child will struggle and kick around the bed, and this excitement will offset any good that may arise from the use of the cloths. Children, particularly, should be made to swallow fluid as rapidly as possible after the operation. The throat is so extremely sore that sometimes the child will go for four days to a week without allowing anything to pass the pharynx. However, they must be encouraged to swallow at the earliest opportunity, first being given orange juice in which the white of egg has been whipped up or some milk which is slightly cooled. In order to eliminate the pain on swallowing, the attendant should grasp the head of the child with the palms of the hands over the ears and hold the head up so that the muscles of the neck are on a stretch. It will be found that the child can swallow in almost every case, without any difficulty if this procedure is resorted to. Whether an actual act of swallowing takes place, or whether the child simply uses the esophagus as a funnel, it is impossible to say; nevertheless it is surprising to find how easy it is for patients to perform the act of deglutition if they follow this procedure.

Frequently, altho there is no bleeding at the time of operation, oozing from veins or arteries which have been exposed, will take place after the operation is over. Sometimes this will occur the first night, but the author can cite an instance in which the acute hemorrhage occurred on the sixth day. This hemorrhage must be controlled at once. It is wise to watch the pulse. If the pulse rate is below 100, one need not be alarmed, but if the rate jumps up to 110 to 150, something must be done immediately to control the bleeding. If the child is at all tractable the mouth should be opened and pledgets of cotton, on which a small amount of adrenalin or thrombo-plastin is placed, may be inserted into the bleeding cavity. One cannot insist too strongly on the necessity of good illumination while making an examination of the throat at this time, because a spurting vessel, deep down in the space between the pillars, must be seen, grasped and tied off, if the bleed-

ing cannot be stopped by the ordinary pressure. The author is happy to say that in no instances has he had to resort to very radical procedures to stop post-operative hemorrhage, because in almost every one of his cases, the oozing has been venous. If the child, however, is in a very precarious condition one may have to resort to intravenous infusion of salt solution or the actual transfusion of blood.

The Chronic Heart Patient.—In his remarkably interesting and practical paper, Babcock (*Wisconsin Med. Jour.*, February, 1923) considers that large number of patients who come to the physician because alarmed by unwonted pain or other sensation in the region of the heart or on account of a sudden attack of palpitation, so-called. Either of these sensations may occur alone or the precordial pain may be accompanied or followed by rapid or irregular heart action. In all such instances it should not be concluded that heart disease is present until convinced by careful inquiry into the history and by the discovery of indubitable evidence of a cardiac defect. The etiologic factor may be some toxic agent producing an intercostal neuritis or upsetting cardiac action thru the vagus. Therefore, before assuming the heart to be at fault and telling the patient his pumping apparatus is responsible, the toxin or other disturbing factor should be sought for and removed. The cause may reside in diseased tonsils or teeth or digestive tract in cases of nerve irritation or in some agent introduced into the system from without, such as the abuse of tea, coffee, tobacco and (nowadays rarely) alcoholic beverages. Palpitation has been found in women the direct result of visceroptosis or pelvic displacements. The point particularly emphasized by Babcock is that not only is it seldom necessary but usually unwise to send the patient to bed. Physicians should be careful never to frighten the patient even should auscultation disclose a systolic murmur. It is not uncommon for a systolic bruit to appear during the disordered cardiac action and then to disappear when the heart has become quiet and regular. In short, the psychical management is as essential, often more essential, than is rest, digitalis and other commonly employed therapeutic measures.

Focal Infection in Tonsils.—R. S. Pentecost, M. B. (*Canadian Med. Asso. Jour.*, November, 1922) has made a special study of cases of focal infection in the tonsils of adults suffering from subacute and chronic systemic diseases. From an analysis of his observations and of the results of removal in a series of 800 cases he concludes:

(1) Hemorrhage either during or after operation is easily controlled and should not be considered as a contra-indication to the removal of infected tonsils by a competent operator assisted by a skilled anesthetist.

(2) Post-operative complications very seldom

occur if the technic and post-operative care as used in these cases are employed.

(3) Focal infection in the tonsils is a definite causative factor in disease and its removal is indicated in the following diseases: Rheumatism, myalgia, neuritis, cervical adenitis, chronic catarrhal and adhesive deafness, disordered action of the heart, general debility, neurasthenia, migraine and recurrent coryza.

(4) Focal infection, by lowering the natural resistance of the body may be contributory tho not a definite causative factor, in the production of the following diseases: Chronic bronchitis, valvular disease of the heart, neurosis, mental diseases, asthma, nephritis, osteomyelitis, synovitis, gastrointestinal disease, pleurisy, furunculosis, cholecystitis, skin affections, painful scars, tracheitis, goiter, pernicious anemia, and tuberculosis. The oto-laryngologist may afford assistance in these cases in determining when a focal infection is present, but the removal of the tonsil should be advised only after careful consideration and consultation with the physician treating the systemic disease.

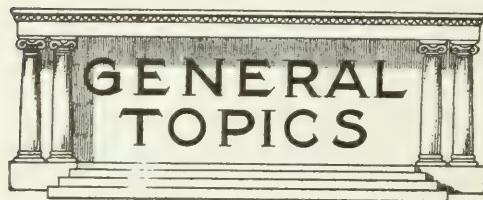
(5) In our group of cases the following diseases when chronic were uninfluenced by the removal of focal infection: osteoarthritis, epilepsy, sub-acute bacterial endocarditis, prostatitis, anglo-neurotic edema, progressive muscular atrophy and organic nervous diseases.

Calcium Treatment of "Nervous Headache."—Baastrup (*Ugeschrift fur Laeger*, February 1, 1923) recommends and points out the rational basis of tentative calcium treatment in all cases of rebellious headache for which no special cause can be discovered. In some patients in this class, a tendency to recurring attacks of Quincke's edema suggests that the headache might be due to the intracranial extension of the process, and that calcium would be the logical treatment. A familial predisposition was always evident in this group. The recurring attacks and puffiness under the eyes, swelling of the lips and other manifestations of Quincke's edema were accompanied by the severe headache. The portrait of the grandfather of one of these patients showed the same puffiness under the eyes. Baastrup gave calcium lactate, 1 gm., one to three times a day for three weeks, and then with longer intervals for ten days. The results were excellent: The edema and the headache subsided, as also a vasomotor rhinitis which had proved refractory for several years. In other cases absolutely no cause could be discovered for the "nervous headache," but the calcium tablets proved equally effectual. The children in these families were usually of the exudative diathesis type. The blood may show a lymphatic tendency in cases of nervous headache, and this is a further indication for calcium treatment.

The Value of Oxygen Therapy.—Since oxygen is so essential for the life of every cell, it seems remarkable that its therapeutic administration

has not achieved more obvious results in the past. Barach (*American Journal of Surgery*, January, 1923) ascribes this failure to faulty technic. Decided improvement was brought about in cases of war-gas poisoning. It has been shown by various investigations that the low content of oxygen in the blood of many cases of pneumonia can usually be raised to the normal level.

Pneumonia is the classical disease in which abrupt want of oxygen takes place, and it is therefore in this affection that effective oxygen therapy is most needed.



Vaccination is 2,000 Years Old.—“Vaccination is an outgrowth of man's effort to protect himself from pestilence by using nature's methods of defense,” says Dr. G. W. McCoy, director of the Hygienic Laboratory of the U. S. Public Health Service. “Primitive man noticed that recovery from a first attack by most diseases gave immunity against other attacks; and some 2,000 years ago he began to inoculate his fellows with smallpox when conditions seemed propitious instead of waiting for nature to do it at some time when conditions might be very unpropitious.

“Inoculations against smallpox were made in India and in China as early as 300 B. C. Later, when the disease reached Europe, inoculation went with it, supplemented by a new method called ‘selling smallpox’—exposing a well person to contact with one ill with the disease so that if he survived he would be proof against it.

“Inoculation differs somewhat from vaccination as devised by Jenner, but the principle is the same. Moreover, long before Jenner's day it was known that an attack of cowpox gave immunity from smallpox; and records show that men who had recovered from cowpox had themselves inoculated with smallpox to make the proof conclusive. Jenner, however, as he himself says, ‘placed vaccination on a rock’ where he knew it would be immovable.

“Before the days of vaccination, conservative estimates show that one-third of all persons had smallpox and one-tenth of all deaths were due to it. Today smallpox is rare; many physicians have never seen a case; and, where vaccination is consistently practiced no deaths from it occur. Formerly, smallpox was considered a children's disease; and it still is a child's disease—where infantile and school vaccination is neglected. Witness the Philippines, where four or five years ago, after years of neglect of vaccination, an epidemic swept away nearly 50,000 persons, a large percentage of whom were children under ten years of age.”

In the United States, well-vaccinated communities show low smallpox rates. Poorly-vaccinated States tell another story: Oregon with 1.45 per thousand population, Washington with 1.72, and Kansas with 2.0 per thousand population.

Some communities wait till an epidemic breaks out and then rush to vaccinate. This stops the disease—after it has caused many deaths and has “branded” many survivors. Sixteen months ago, in Kansas City, an epidemic of smallpox began, yielding 350 cases and 123 deaths; and a few months later another started in Denver and yielded 950 cases and 288 deaths. Such epidemics always end the opposition to vaccination in the community—for a time.

Effect of Drinking Water With Meals.—Ever since the very interesting experiments that were carried on by Hauck at the University of Pennsylvania (*Jour. of the Amer. Med. Assn.*, August 20, 1921) upon the drinking of water with meals, there has been a reasonable interest in this subject, but nothing like appreciation or understanding of the true facts has seemed to be taken up by the medical profession at large. A correspondent of the above journal makes inquiry as to the effect of drinking water, and we quote verbatim the answer of the *Journal*.

The immediate effect of water during a meal is certainly one of dilution. However, this fact has been overemphasized by those who are adverse to the drinking of water with meals, for it has been shown indubitably by several investigators, working on dog and man, that water itself promotes a secretion of gastric juice and that when water is given shortly before or with a meal it has a very definite effect in increasing the secretory response of the stomach as regards volume of juice and acidity. A given amount of water has “less and less effect on gastric secretions the longer the time interval between the meal and the giving of water” (Sutherland). Ivy has likewise found that the ingestion of water with the meal increases the amount and the free and total acidity of the gastric juice. Incidentally, the ingestion of water with meals decreases the emptying time of the stomach.

The editor of this department wishes to call attention to the fact that physicians are still laboring under the impression that cold water is injurious to the human stomach, when as an actual fact, its action upon the gastric mucosa is the same, or practically the same, as upon the cutaneous surface, namely: A tonic effect, as well as increasing secretory power of the stomach. That the cold is not serious or dangerous, can be easily tested by taking out one's watch, holding some ice water in the mouth and noting how quickly it becomes warm. This will dispel to a great extent the delusion of the cold water stomach crowd.

Fat as Food.—Fat is one of our most useful foods. A writer in the *Medical World* (Jan-

uary, 1923) says that our ability to assimilate it, however, is limited. Still, there are some persons who can absorb and retain fat. It is not fully known what causes or permits assimilation. It is known that properly functioning endocrines cause women to put on fat. William Engelbach of St. Louis, Mo. (*Medical Clinics of North America*, November, 1920), shows the effect of thyroid, gonad and pituitary administration in controlling menstruation, growth and adiposity in women.

Some persons seem not to assimilate any fat. Taking much fat with the food may cause indigestion. The body needs fuel to drive it. The human machine gets its power from the food it consumes and turns into energy. Among the fuel foods are the sugars, starches and fats. Of these, the fat is perhaps more quickly digested and converted into heat and energy. Too much, however, must be avoided. Fried foods are especially difficult of digestion, mainly on account of improper methods of frying. Foods fried hard are unfit to eat—likewise food soaked in fat. The important thing to remember in frying is that fat when heated to a high temperature begins to decompose and form compounds irritating to the digestive tract. The difference is illustrated by comparing properly cooked French-fried potatoes with the greasy kind, and light, crisp doughnuts with the repellent "sinkers."

Among the fats used as food are the fat of meat, lard, suet, bacon, cream, butter, chocolate, cocoa, olives, nuts and cocoanut. Two-thirds of the flesh of the olive is oil. All fats, as far as known, possess the same fuel value, and yield, pound for pound, the same amount of energy. A pound of fat will yield two and one-quarter times the amount of energy units or calories that can be obtained from a pound of other energy-producing foods, such as sugar, starches, lean meat, etc. Fat is thus shown to be a concentrated food.

Not all fats have the same quantity of vitamine A, which is necessary for growth. Butter, cream and the fats from such organs as the kidneys and liver rank high in their content of vitamine A. Vegetable fats do not contain this vitamine.

Nuts contain a high percentage of oil and should be valued accordingly.

Absorption of fat may be aided by the physician. The liver supplies a fat-splitting ferment in the bile. This, of course, does not meet the fat until the latter reaches the duodenum. Anything that will stimulate the flow of bile is an aid. Substances that aid gastric digestion assist in getting the ingested food from the stomach into the duodenum, and thus in contact with the bile. Hydrochloric acid, pepsin, sodium bicarbonate, etc., are among those commonly used for this purpose. Calomel has the reputation of assisting in stimulating the flow of bile. The bile salts in various combinations are also used successfully. The gall-bladder drainage recommended and practiced by Dr. George M. Niles also assists in getting the bile flow started. In fact, he says it sometimes is sufficient to cause catharsis.



At the regular meeting of the Medical Board of the Bronx Hospital and Dispensary, held on December 28, Dr. William J. Robinson and Dr. Martin Rehling were unanimously re-elected President and Secretary, respectively, of the Medical Board, for the twelfth successive year.

Chiropractic Salesmanship.—The originator of chiropractic recently broadcasted by radio a talk on salesmanship as applied to chiropractic. He urges his followers to realize that their work is a business which must be "sold" to the public. This can be achieved best by convincing everybody that they can be benefited by spinal analysis and adjustments. The radio also informed the public that health can only be obtained by seeking the advice of chiropractors. Does the inactivity and silence of the medical profession thruout the country not seem like a wrong to the more ignorant sections of the public?

Peace, At Last.—A recent issue of the *Chicago Health Bulletin* reproduced the following entertaining letter which a Kansas citizen wrote to the editor of his local paper:

"I wish to thank the city authorities for quarantining my family and me for three weeks recently, because one of them had the smallpox. During that time my wife caught up with her sewing; we had three square meals a day, as no one came in and she was not permitted to leave; we enjoyed three weeks of good nights' sleep; and best of all, a cousin with four children who had arranged to visit us, saw the smallpox sign on the door and left town so scared she will never come back again."

It is to be hoped that the publication of this letter will not lead to a succession of infectious diseases of the hasty suspicion of such with peremptory demands of the victims to be quarantined.

Professor J. J. Mackenzie, head of the pathological department of the University of Toronto, died a victim of his experiments to enable science better to cope with the deadly streptococci which during the war he saw ravage armies fighting in the Balkans. As a result of his experiments with the pus-forming bacteria, Professor Mackenzie was attacked by acute ulcerative endocarditis. He was born of Scotch origin in 1865, and was educated at the Univer-

sity of Toronto, Leipsic and Berlin. During the war he served at Saloniki.

The Index Catalogue.—Volume III of the Third Series (blood-coffart) of the Index Catalogue of the Library of the Surgeon General's Office, has been published. The compilation of this Index Catalogue is of the greatest value to the medical profession. Great care has been taken in the preparation of this material. Writers on medical topics, editors and research workers find these volumes practically invaluable.

A research fellowship of \$1,000 for the study of orthopedics in relation to hygiene and physical education has been offered by Wellesley College.

Opium.—The United States imports ten times more crude opium than Germany, France and Italy together. It is estimated there are 2,000,000 drug addicts in the country today.

Hospitals in the Philippines.—Colonel Munson is working with Governor General Wood to bring about the passage of a bill laying the foundation for a countrywide system of hospitals in the Philippines. Of the forty-eight Provinces visited, twenty-eight lack hospitals, and in thirty-two nothing is done to preserve public health.

Dr. de Jesus, director of the Philippine Health Service, told members of the chamber that two-thirds of the total deaths in the island were due to preventable causes. Half the economic loss, he said, could be saved thru installation of a modest hospital system.

The School of Hygiene.—The trustees of the Rockefeller Foundation have given two million dollars and the British Government will provide the staffing and maintenance for five years of a School of Hygiene to be located in London, but whose work will be international in scope. The new school will be governed by a council representative of all parts of the world.—*Hosp. and Health Rev.*, London, June, 1922.

Sleep Recording Instrument.—An instrument designed to record the number of hours of sleep without the knowledge of the patient tested is described by Dr. W. Gerber in a German periodical, account of which is republished in *The Lancet*. The mechanism consists of a thick layer of rubber placed between one of the bed-posts at the head of the bed and the floor in order to allow some elastic play. The post over the rubber pad is connected to a delicate lever which writes on a revolving drum. If the person on the bed changes his position and

in this way alters the center of gravity of the bed, the waves on the drum show the time of night or day when the movement took place. The slightest restless movement or change of position is thus recorded. In deep sleep a person moves little.

The instrument will be of use in convincing patients that they have underrated the amount of sleep obtained during a night. Dr. Gerber claims also that attaching the contrivance to an electric bell which will ring in a distant room when the patient moves will in many cases dispense with a night nurse.

Scientific Men Visiting from Strasbourg.—A delegation of members of the faculty of the Medical School of the University of Strasbourg, Alsace, have come to the United States as the guests of the Rockefeller Foundation for the purpose of studying the organization and methods of American medical schools.

Price of Radium Drops.—It is announced by the United States Geological Survey, Washington, D. C., that the price of radium has decreased owing to the discovery of vast quantities of radium-bearing ores in Africa, which are easily worked at a much lower cost than the American mines. This caused a drop from \$120,000 a gram to \$70,000, which is the lowest price at any time since radium has been used. In connection with Cancer Week, the Survey announced, the State of New York and the city of Philadelphia have each bought 2 grams for the use of their citizens, and the city of Quebec, Canada, 1 gram.

Cornerstone of Gorgas Memorial Institute Laid.—The cornerstone of the Gorgas Memorial Institute for research in tropical diseases and the study of preventive medicine was laid, February 18, in the exposition grounds in the city of Panama. Dr. Belisario Porras, President of the Republic of Panama, and originator of the Gorgas Memorial Institute idea, was the principal speaker. Dr. Porras contrasted the Panama of his student days with that of today. He said it was the most natural thing in the old days to pass friends in the streets who were hurrying home in the grip of malarial chills, or with some other pernicious fever, but that, thanks to Gorgas, the tropics have been redeemed, and Panama has been made one of the healthiest cities. Drs. Franklin H. Martin, acting president of the institute, and Augusto S. Boyd, responded to Dr. Porras' address. Bronze medals commemorating the event were distributed. Following the ceremonies a reception was given at the presidential palace. The institute will be governed by a board of directors of which Rear Admiral W. C. Braisted, retired, is president. Dr. Richard P. Strong, director of the Harvard University School of Tropical Medicine, has been chosen scientific director.

American Medicine

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Nurses' Training.—The problem of securing an adequate supply of carefully trained nurses to meet communal needs has attracted considerable discussion. The useless abuses of individual variants among the nursing profession cannot be construed as a valid attack upon the educational system employed in their training. There are disagreeable persons among the nurses, as among the physicians, and no form of education is likely to be successful in transforming a disagreeable personality into one that reflects angelic characteristics.

In *The New York State Journal of Medicine*, March, 1923, T. Wright expresses the opinion that the graduates from nurses' training schools in the past decade are not more competent to care for the sick than the graduates of the previous decade. He comments, "They are graduating an exceedingly poor imitation of an incompletely educated doctor, rather than a highly efficient nurse of the sick." This impression is supplemented by the suggestion that "The average nurse on graduation from one of our large hospitals feels that she knows far more than the average interne, and often has no hesitancy in criticizing, from her larger knowledge, the practitioners of many years' standing." This represents the opinion of a physician who questions the value of the nurse's training, as at present developed.

Experience has indicated that the nursing profession has undergone numerous alterations. The field of its labors has broadened,

so as to include a vast variety of duties that were not dreamed of a decade ago. The influence of preventive medicine has manifested itself in the need for community nursing, public health nurses, and, similarly, nursing executives for a large variety of medico-social institutions. In consequence, a higher type of woman has found an opportunity for service, personally more gratifying than the routine nursing attention to the sick. Similarly, the wider extension of opportunities for women in all forms of industrial life has tended to decrease the number of girls who formerly entered nursing as practically the main field open that gave some degree of professional standing.

The training standards of hospitals have been raised considerably, and, as a result, the curriculum of the training schools has increased in difficulty and variety, in order to heighten the standard of education given.

Dr. Wright believes that the nursing shortage is complicated by the fact that the graduate nurses are below his expectations at the bedside.

This point of view involves a restitution of the old type nursing automaton, without initiative. She must know only enough to carry out orders, make a patient comfortable, and appreciate the importance of calling upon the physician when unforeseen circumstances arise that require special treatment not already included in the orders of the day. "I do not depend upon her for

diagnosis, nor for the initiation of any line of treatment, or delicate explanation of symptoms. If she will record them, so that I can do the interpreting, she has gone as far as I ask." This standard of policy may preserve the position of the doctor, but it is dubious whether it advances the welfare of the patient. All too frequently immediate diagnosis and prompt emergency treatment are necessary to save the lives of patients.

It is understandable that there is a decided need for a type of nurses or attendants, which is more competent than the ordinary lay woman, who lacks the highly skilled training of the registered nurse. It is probably true that there has been over-training of nurses, in so far as the ordinary care of the sick is concerned. It would be unsafe at present, however, to lower the standards of nursing training, in view of the wider use that is made of the trained nurse. It would seem more necessary to introduce shorter courses of training, into which might go those who wish to fit themselves only for bedside nursing.

Dr. Wright suggests that a short course of from twelve to eighteen months in practical nursing would meet this difficulty, and suggests post-graduate courses to enable those who desire to fit themselves for special service. Such a training might work out successfully, but it is unlikely that this procedure would do aught but permit a group of nurses to be trained, whose practical service would be limited to meeting the needs of the community at the bedside, under conditions that might arise during the course of an epidemic. It must not be forgotten that under usual conditions of health, nurses are not occupied fully, and, in consequence, there would be an overproduction of nurses, which would tend to limit the entrance to training schools of the type of

women who desire full time occupation.

It is recognized that a part of the difficulty in the nursing situation arises from the segregation of portions of the nursing profession to the specific needs and demands of physicians, who utilize them as office nurses, laboratory technicians, and employ them for taking care of the helpless and hopeless, who really do not require the services of well-trained individuals. Physicians are quick to take advantage of the excellent assistance which is to be secured thru the constant employment of the modern trained nurse. Incidentally, many are lowering the standards of nursing, by outfitting as trained nurses, for office use, persons who have had absolutely no training or experience, and are thus deflecting from actual training young women who would be of greater value to themselves and to the community, if they were to take up a nurse's training, in the regular manner.

While the nursing situation is closely linked up with medical practice, it is unlikely that physicians will have much influence in determining their destiny. The highly intelligent registered nurses are sufficiently strong in number and capacity to determine their own destiny. They probably are no more likely to submit to reducing their professional status, or lowering their educational qualifications, than was the medical profession a few years ago, when there was considerable demand for decreasing the educational qualifications to enter into a medical school, and a rather widespread feeling that the course of study in medical colleges should be reduced in the range of subjects taught.

The nursing shortage of the past few years has been due, not so much to the failure of training schools, as to the greater

appreciation of the value of trained nurses. Their services have been in wider demand, their field of activity has been broadened, the law of supply and demand has been at work, and nursing has been in competition with other types of service for women in order to gain the essential student groups. Probably the solution of the nursing problem, as viewed by the physician, lies in making bedside nursing more attractive than it has been, in increasing the freedom and independence of nurses, and in utilizing trained nursing service for the types of illnesses where nursing is really indicated.

At the present time, an ever-increasing number of the poor are receiving the benefits of adequate nursing service thru district nurses, which goes far to prove that nurses are not opposed to bedside nursing, but wish to take up this work on a more equitable basis, so far as their time and energy are concerned. Incidentally, it may be said that the district nurse receives far less compensation than does the nurse of the same training, who sits around all day, giving comparatively little nursing service in the homes of the rich, whose main claim for the time and attention of the nurse lies in their ability to pay for the service, and the unwillingness to devote the time and thought to the care of their own.

The tendency to cast aspersions upon the nursing profession is unfortunate and essentially unfair. The group is not to be condemned, because of occasional experiences with variants in the profession, nor should efforts be made to lower the educational standards of the profession as a whole, because there appears to be a need for an increased number of nurses to give bedside care.

It is doubtful whether this form of shortage is more than a transitory affair, due to

the general topsy-turvy conditions which have grown out of post-war development. The medical profession, itself, has its own tremendous difficulties in adjusting the situation as regards the disposal of physicians where they are most needed. One would scarcely suggest that a doctor of less training be sent into the rural communities, where the doctor shortage is most acute.

The Prescription of Alcoholic Beverages.—A most significant decision has been rendered by Federal Judge Knox, of New York, which temporarily nullifies that part of the Prohibition Law which restricts the rights of physicians to prescribe alcoholic beverages as medicine.

While at the time of writing there is still a question as to what attitude the Prohibition Commissioner and the Secretary of the Treasury may take towards the situation that has arisen, it is indubitable that the medical issue has been squarely presented to the courts. The question as to whether or not physicians might abuse the privileges granted does not arise, but it remains for the Supreme Court of the United States to pass upon the principle involved as to the extent to which the federal government may control medical practice.

If it is possible for the federal government to determine the number of prescriptions for whiskey which a physician may issue, and the amount of alcohol which he may prescribe within any definite period of time, there is no reason to believe that it would be contrary to constitutional law to undertake the regulation of the medical profession in its administration of any other particular drug. Further, it is not unrea-

sonable to believe that if it be permissive for the federal government to determine the amount of alcohol which may be prescribed, it may similarly determine whether calomel is to be administered in doses not to exceed one-tenth of a grain, or ammonium chloride in amounts not to exceed twenty grains per week. Carrying out the idea still further, it is conceivable that there might be sufficient regulation demanded and enforced to require a definite school of medicine to be the only one followed by practitioners thruout the country.

At the present time this decision of Federal Judge Knox is not to be considered as a triumph of the "wets" over the "drys." It does not represent an opinion concerning the usefulness or the necessity of alcohol in the dietary. Nor, indeed, does it even go so far as to cast light upon the therapeutic value of any or all of the alcohol-containing fluids. It is thoroly and clearly a ruling that raises doubt as to the right of the government to regulate the practices of physicians. It is purely an appeal to constitutional law for the protection of the medical profession in their discretionary rights to prescribe in accordance with the dictates of their consciences and in harmony with their views concerning the therapeutic virtues of alcoholic medication. It is pre-eminently an appeal to the highest court to determine in how far government officials may undertake to determine medical practice in their efforts to carry out regulations designed to lessen the liquor traffic. The prescription of alcohol for medicinal purposes is not to be regarded as a part of the liquor problem of this country.

The Harrison Act, in part, regulates the method by which narcotics may be secured, but very properly there is no element in it which regulates the amount of opium,

codein, or heroin, which may be prescribed, according to the legitimate needs of individual patients, within any definite period of time.

The conscientious physician does not object to reasonable regulations designed to protect the public and the profession. This, however, is not identical with acquiescing in regulatory edicts, predetermined in such a manner as to interfere with the needs of the sick. The abstract governmental forces are by no means competent to determine what degree of alcoholic medication may be required by individual patients suffering from a large variety of diseases; nor is there any sane justification in establishing a maximum dosage, which cannot be exceeded, without violation of the law, regardless of the best interests of the patients.

We are thoroly conscious of the tremendous social benefits which have been secured thru the Nineteenth Amendment and the Volstead Enforcement Act, but this does not call for blindness as to shortcomings in the interpretation of the Volstead Act by those charged with the responsibility for its enforcement. There probably never was any intention to interfere with medical practice to the degree which has been attempted.

Dr. Samuel Lambert and his colleagues, who undertook to test the constitutionality of this unwarrantable regulatory effort, have earned high commendation from the medical profession. Their wisdom and judgment thus far have been declared legally sound. It is to be hoped that the decision of the Supreme Court, which may not be given until late in the year, will demonstrate clearly and fully the rights of the profession to prescribe, freed from

unnecessary, stupid and arrogant interference.

Summer Fresh Air Work.—Plans are now being made by a large number of organizations to provide for the summer care of children. The fresh air outing has made a considerable appeal to the public, largely on the basis of sentimentality, and a contrast of the difficulties of city life and rural opportunities for children. It is essential, however, to differentiate outings and general fresh air work designed to prevent or cure diseases, to serve as recreation, or to tide over social situations.

It should be appreciated that the need for convalescent care and fresh air service exists throughout the year. The demands of school attendance and the handicaps of climatic conditions in temperate zones appear to throw the peak load of fresh air work upon the summer months. From the purely medical standpoint, it is important that there be some evaluation of fresh air work in terms of the end-results upon the health of the children who are cared for. There is too great a tendency among institutions to represent in their annual reports that they have given fresh air care to large numbers of children and to stress with pride the total tonnage added to the children who have been under their hospital roofs for a period that probably averages about two weeks.

These total figures are sometimes exceedingly high, but they are by no means indicative of the medical service provided, or the physical advantages yielded to the children cared for, or those most requiring fresh air or convalescent care. A two weeks' outing is inadequate, and even the

gross tonnage does not evidence profound medical benefits.

It would appear desirable to adjust the plans for fresh air work throughout the year in such a manner that the period of stay would be determined by the individual needs of children. Many institutions would care for a smaller number of children, but their actual number of days of care would be identical, and the medical results of their service would be of greater communal benefit.

The primary purpose of fresh air outings and convalescent care should be to restore the half-cured individuals, who are discharged from hospitals, to their maximum functional activity. While pleadings are made for fresh air, it must be recognized that sunlight and oxygen, tho of paramount value, are not more important than the provision of proper food, the supervision of exercise, the relief from the noise of the city and the unhappiness of homes, and the amusement, recreation and occupation which constitute elements in rational convalescent care.

Medically speaking, fresh air work constitutes a phase of prophylactic or convalescent care for children exposed to various diseases, or for those who have undergone surgical treatment, or are handicapped by cardiac disease, rheumatism, bone and joint diseases, or afflicted with temporary mental disorders, or any of a large variety of nervous diseases.

Considering the juvenile population, it is recognized as impossible to make provision for all children to whom, from a social standpoint, it would be desirable to offer fresh air or recreational facilities. It therefore becomes more imperative to arrange the distribution of children in such

a manner as to yield the maximum benefits to those most requiring fresh air treatment. Hence the importance of instituting a well-considered system of distribution of children who are to receive the benefit of this type of service.

Brush has referred to convalescent work as "serving as an extension arm to hospitals." In accordance with his idea, it would appear reasonable to give first attention to the children who are to be discharged from hospitals, or who are under care in various dispensaries, or with private physicians.

Every fresh air agency should require a physical examination and reasonable diagnostic explanation for the admission of children to its groups, in order to select those most needing it.

While fresh air work has been developed thru a number of years, there is a comparative lack of definite information concerning the actual accomplishments. It is time that some method of evaluation be undertaken. What are the definite objectives of fresh air work? What is the method of administration? What is their cost? How long are children retained? What type of children are given the preference? How many months of the year are the fresh air agencies available? What are the provisions made for boys and girls? To what extent is there segregation in the work, according to specific medical needs? How far is there duplication of effort in investigation and, indeed, in the provision of service? To what extent is recreational or vacational outing the aim, or to what extent are actual medical end-results considered? What is the actual average period of duration in the various types of institu-

tions and what is the time distribution of service thruout the various months of the year?

Facts of this character are essential, in order to appraise the medical worth of fresh air agencies. Laying aside all considerations of sentimentality and applying oneself direct to the medical aspects, there is reason to question the actual successfulness of much that now is heralded as possessing great value to children. It is doubtful whether fresh air agencies have played a considerable part in reducing the mortality or morbidity of childhood during the past decade. Previous to that time they were of particular value in connection with the restoration of health of infants. The development of the modernized educational approach to the health problems of childhood has revolutionized our ideas concerning the safety of cities for children. In consequence, the needs for fresh air work have taken on another meaning. The preventive and therapeutic ends to be served are today bound up in a consideration of elements other than the ever-important sunlight and fresh air.

The tremendous capital investments in fresh air agencies, and the high cost of maintenance constitute a reasonable basis for a challenge of their effectiveness. Is the capital investment bringing in adequate health dividends?

The time has come when quality of service should be considered as preferable to quantity of service. All fresh air work should be regarded as a plan for the care of children thruout the year, for the purpose of raising the health standards of a community. The summer program today should be subordinated to a new re-organization of existent facilities, on the basis

of securing the necessary help of fresh air agencies during all the days of the year.

The Psychopathic Laboratory.—In the *Journal of the American Institute of Criminal Law and Criminology*, Harold Shepherd, Professor of Law at Wyoming State University, presents an excellent plea for the development and use of the psychopathic laboratory. Regardless of the fitness of the term applied to the laboratory, no more valuable piece of machinery has been introduced during the past ten years for aiding and abetting justice.

Mr. Justice Wilbur has recently advised that the insanity defense to crime charges should be abolished. If insanity is a defense, it should have no standing in court and it becomes more important that a psychopathic laboratory cooperate to the extent of offering information for guidance in pronouncing sentence on those found guilty.

It is recognized that courts of justice have been slow to alter legal procedure in the light of the advances of medical science, but this represents the inertia of justice, as dependent upon precedent. The recognition that insanity is not the only form of mental abnormality that may enter into the commitment of a crime, gradually is being recognized. Until courts do recognize this important principle, there are bound to be numerous continued maladministrations of criminal law. The "right and wrong" test is inadequate for determination of responsibility for the defendant, and serves, not infrequently, to liberate dangerous individuals who are free to repeat their depredations upon society.

Under ordinary circumstances the studies of a psychopathic laboratory would protect

society in that the disposition of the alleged criminals would be based upon their proper classification, and future care would be as much a matter of public concern as the establishment of his guilt or innocence.

Justice Wilbur practically states the necessary importance in court procedure that is indicated. "My proposal then is this, that insanity no longer be treated as a defense to a criminal charge and that evidence on that subject be excluded from the jury trying a criminal case; that after conviction the defendant, upon suggestion of insanity, be examined by a board of alienists, with a view to determining whether the defendant should be committed to the state hospital, or prison, or be released under probationary supervision to private hospital or to other custody; that the judge be empowered to make such supervisory orders from time to time upon the advice of competent alienists as may be necessary and that the state retain jurisdiction over the defendant, even after an apparently complete cure, for at least as long as the maximum term of imprisonment for the offense, resuming custody of the defendant during that period whenever symptoms of a relapse make further custody desirable for the protection of the public."

Mr. Shepherd advocates the substitution of the term psychopathic laboratory for the phrase, board of competent alienists. The laboratory would be a part of the criminal court machinery, under the control of impartial state employed experts. This course of procedure would lead to rational distinctions between different types of criminals of the same grade, and their adequate differentiated treatment, based upon their physical and mental characteristics. It is patent that the reformation of the criminal involves an individualization of management

that demands segregation in a particularized environment.

Shepherd calls attention with due force to the types found in the state prison of Indiana, where no segregation exists. Out of 2,500 prisoners, 675 were feeble-minded; 250 actually insane, 200 epileptic, and 450 psychopathic. No argument is required to indicate the gross injustice of herding them together, in a single institution.

More significant for the protection of the public is the part the psychopathic laboratory can play in the prevention of crime thru the reduction of recidivism. In many prisons there are criminals, who have been convicted as many as from five to fifteen times for previous offenses. Society has made no particular provision for saving the trouble and expense of the all-too-numerous prosecutions, which might have been obviated by a just disposition of the criminal at the time of an earlier conviction. The cost of a psychopathic laboratory is exceedingly small, compared with the cost of a prolonged criminal prosecution.

Further, the psychopathic laboratory would function more successfully in scientifically classifying criminals, with a view to determining their physical and mental status. This would be a valuable contribution, not merely for the determination of the institution to which the criminal might be sent, but for providing adequate data in connection with the granting of pardons, probations and commutations of sentence.

It is not to be suggested that psychopathic laboratories today are perfected machineries, but they represent the most scientific approach to the problem of securing individual justice, on the basis of observation and expert study. No one denies that a careful study of the psychiatric, psychologic, physiologic, and sociologic physical and criminal-

istic factors that enter into an individuality yields information of an estimable value.

This sphere of activity merits recognition and utilization. It is a practical basis for abetting justice, protecting society, dealing fairly with alleged criminals and delinquents, limiting crime, and securing reformatory treatment, when possible, along accepted scientific lines. The establishment of psychopathic laboratories in conjunction with the courts is a desirable, practical step in attacking the causation of crime and gaining the knowledge that may be of service in preventing increase of criminal activities.

City Noises.—In the *National Municipal Review* of October, 1922, Willis O. Nance, M. D., calls attention in a popular way to the necessity for more organized effort for the control of city noises. While it is recognized that prosperity and progress involve considerable movement that cannot be free from sounds, it is patent that public indifference permits an excess of noise, which is wholly unnecessary. Too frequently noise, itself, is interpreted as the evidence of useful activities.

Dr. Nance emphasizes the part that noise plays as a causative element in many nervous diseases and dwells particularly upon the part it plays in the production of various mental conditions, particularly among those who are sensitive to sounds, excitement and confusion. There is much to be said in support of his plea for the protection of the many thousands of persons who are daily ill and whose return to health may be slowed by reason of the din and clamor of the streets. It is not merely those who are actually bed-ridden or convalescent, but also the vast number of people who are on

the edge of nervous or mental illness, over which they may be pushed by the reverberating sounds of a noisy community.

It is not merely the festal noises of a holiday season—the horns and bells, and infernal noise makers—but the clangors of daily living, whose accumulative efforts tend to interfere with nervous well-being. It is recognized that the highest degree of efficiency and the most rapid mental work demand an atmosphere of quiet. It is not impossible that human efficiency is considerably reduced by the useless noises that arise from flat wheels, worn rails, the rattling of carts over cobblestones, the barking of dogs, the screeching of cats, the factory whistles, the tat-tat-tat of drilling and riveting, the church chimes, the raucous cries of street barkers, the automobile sirens, the police whistles, the three-piece German bands, the cheers, the jeers, and the useless conversations of daily life.

The significant thing about most of these noises is that few of them promote communal well-being or add to the joy of living. They are for the most part useless and unnecessary. One might enumerate a countless variety of noises and each of them might appear to have some excuse for being, but in the aggregate they combine to create an ocean of waves to assault the ear, increasing the strain of living and indirectly contributing to the discomfort of life.

Otologists recognize the part that noise plays in the development of certain types of deafness, nor need all be developed in the intense noisiness of the boiler-making factory. Living naturally, the ears are subject to assaults, nor is it a simple matter to shut one's ears so as to exclude sounds which are affective largely thru consistent accumulative action.

In some communities zoning systems have been created in the neighborhood of hospitals and schools, with a view to securing a certain modicum of quiet for the sick and the studious. The effort in this direction has been helpful, particularly to those who are actually ill in hospitals. If, however, this attempt at creation of zones of quiet be recognized as advantageous to the ill, it is permissible to ask why good citizenship may not be more interested in lessening all the noises which affect the welfare of all citizens. There is no doubt that considerable effort has been made in this direction, but there has not yet arisen adequate realization of the great contribution to human comfort and happiness that may be secured by muting over-worked vintrolas, decapitating the musical felines, and restraining the nervous honk-honk of automobiles, or the useless noisy operations of machines of all kinds.

It is perfectly true that it is impossible to eliminate all sounds from industries, and, indeed, a too quiet world might become monotonous, but there need be no fears of approaching this deadly level of soundlessness. If some progress could be made toward reaching even a middle point, there would probably be less interference with hearing, more rapid return to health of those who are ill, and more infrequent neurasthenic desperations, and probably a higher level of human happiness.

Controlling Tuberculosis.—The statement that there are constantly over one million people in the United States sick with tuberculosis is indicative of the seriousness of the tuberculosis problem, even tho considerable improvement has been made in

the matter of prevention and cure of the disease. The decrease in active tuberculosis does not actually represent, as far as is known, a lessening of the potential virulence of the infecting organism. In spite of all efforts, most people are probably slightly infected with tubercle bacilli during the early years of life. This accounts for the fact that practically all adults and approximately 90 per cent. of children, between the ages of twelve and thirteen, give positive reactions to the Pirquet test. The frequently exposed droplet infections result in a slight measure of protection, because of the induced resistance, which brings about some degree of immunity against the effects of larger doses. As suggested by F. C. Smith, *Public Health Report*, April 13, 1923, "The individual is, in a certain degree, vaccinated against tuberculosis." The amount of protective immunity thus secured is not great, and weak resistance, lack of proper food, defective ventilation, exhaustion and irritating occupations readily contribute to the breaking down of vitality, with the consequent outbreak of active pulmonary disease.

Safety depends upon the maintenance of a considerable degree of vitality and resistance to prevent the latent bacilli from becoming active, with the consequent evidence of serious tuberculous infection. To many persons athleticism is regarded as the counteracting element, but this is by no means as valuable as the ordinary observance daily of well-known hygienic regulations. Adequate nourishment, work, play and sleep, with well-ventilated rooms, free exposure to fresh air and sunlight, adequate hours of rest and recreation, temperance in all pursuits and recreations, and freedom from the vast variety of diseases, are the effective factors in lessening tuberculosis.

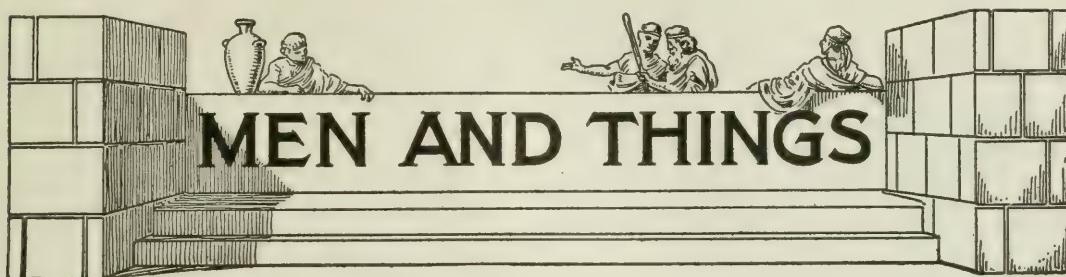
Learning to live in accordance with rational principles has been the most potent factor in reducing the mortality rate of tuberculosis. The attack upon the problem of dissemination, as represented by the tuberculous individual, is at all times essential, with a view to overcoming the ignorance and indifference that lead to carelessness with the discharges and secretions that convey the tubercle bacilli. The program for combating the spread of tuberculosis thru attention to those already infected has been well organized. The greater preventive work, however, continues to be the education of the masses, in school and out, as to what constitutes hygienic living. The degree to which this phase of the subject receives administrative attention serves as an index to the possibilities of reducing tuberculosis in any community.

The Framingham experiment has presented a satisfactory demonstration of what can be accomplished by communal action and the acceptance of responsibility for attacking the educational elements as basic in the medical scheme of preventing tuberculosis. Tuberculosis control is bound up in the concept that communal recognition of the value of health is the fundamental leverage for the elimination of all preventable disease.

"Boost."

"Boost and the world boosts with you;
Knock, and you're on the shelf;
For the world gets sick of the one who
kicks
And wishes he'd kick himself.
Boost for the town's advancement;
Boost for the things sublime;
For the chap that's found on the topmost
round
Is the booster every time."

—*Kiwanis*, Bakersfield, Calif.



MEN AND THINGS

What Do We Know About Encephalitis Lethargica?—At a recent meeting of the County Medical Society held at the Academy of Medicine there was a notable symposium on encephalitis lethargica. The subject was ably presented by Dr. E. C. Rosenow of the Mayo Clinic and by Dr. Lewellys Barker of Johns Hopkins University. The reason for a general interest in encephalitis is its apparent increase. According to a report made by the Division of Communicable Diseases of the New York State Department of Health there were 308 cases of this malady in New York State during February, which is more than have been reported for any other month during the past two years.

An important fact is now coming to light, namely, that encephalitis is probably an air-borne infection inasmuch as positive washings have been obtained from the nasopharynx. These washings, when filtered and injected into animals, produced the well-known symptoms of encephalitis.

A few years ago Flexner and his pupils, working at the Rockefeller Institute, brought out the fact that the site of origin of meningitis is in the nasopharynx. The list of known diseases which find their portal of entry by way of the respiratory tract is increasing. Scarlet fever, measles, diphtheria and possibly several other diseases of childhood find origin on the respiratory mucous membrane. This is of importance because it may lead the way to efforts which have in view the sterilization of the mucosa.

In Dr. Rosenow's experiments he washed the post-nasal space and filtered and cultured the wash water. The culture consisting of heat-killed organisms was injected into rabbits in an attempt to immunize them. Then other rabbits were inoculated, and the serum of the agglutinized animals was injected into the infected animals with cer-

tain very definite results. The infected animals showed two types of reaction—irritative and lethargic. In the irritative type there were present: tremors, nystagmus of the head, hiccup, loss of muscular co-ordination and displeasure when stroked or otherwise annoyed. In the lethargic type there was paralysis of the back or limbs, and the rabbits could not stand or walk. They would roll over and fall off the table and could scarcely be prodded into action. Moving pictures of these diseased animals illustrate beautifully the reactions which one desires to study.

In regard to the causative germ, it is not yet identified, but is probably a form of streptococcus and seems to grow better in the absence of air (anaerobic). Foci were found in the gums, tonsils and sinuses, but not in acute sinusitis. Pathologically, the blood-vessels show infiltration with mononuclear leucocytes.

As to the treatment, both of animals and human beings by the Rosenow serum, results were very variable. Where no effect was obtained we probably have to do with organisms which are not of the same strain or family, that is, the organisms in the serum are different from the patient's organisms. If there is no fever preceding the injection of serum there is no subsequent rise of temperature. If fever is present at the time of injection there is a subsequent rise perhaps to 104° F., which, however, quickly falls. In these febrile cases agglutination takes place, and in any case it must be present if any good effect is to be derived from the serum. Agglutination, we know, is the clumping that takes place when a bacterial culture is acted upon by an immune serum. As a rule, there is no chill. The total amount of serum used in any case must be at least 50 c. c. or more, beginning with 1 c. c. injected either into a vein into the muscles or under the

skin. In favorable cases there is relief of lethargy or irritation, the movements of the body are less marked, but paralysis remains or responds slowly. Whatever improvement there is may be only temporary, followed by rapid recrudescence. The serum injections, however, are worth trying out if used early, that is, within twenty-four to forty-eight hours after the initial symptoms.

Of 130 patients treated with the serum, 85 showed improvement, 43 no improvement, and 2 were apparently made worse. Five of the 85 improved slowly, 38 moderately, and 42 markedly. Of 45 cases, 19 died, making a mortality of 17 per cent. Most of these latter cases were acute and severe. Some had too little serum, some too much. Even after marked good effect following serum injections there is a tendency toward recrudescence. This may occur within two weeks, when a second series of injections may again be given and afford relief. The serum is, however, of no use in the fulminating type. One reason for this is because of the marked sepsis which may have a focal origin in the gums and tonsils.

Dr. Barker classifies encephalitis into three groups: 1. Lethargic; 2. ophthalmoplegic; 3. hyperkinetic. While there is inflammation of the brain and spinal cord in practically all cases, there is not always lethargy or desire to sleep. Some cases show irritation, even muscular rigidity. If the diaphragm is involved there is hiccup, tremors, etc. In the lethargic type, sleep may be prolonged for days and even weeks, but it is a healthful sleep. The patient is relaxed, the blood-pressure is low, and the pupils are contracted. He can be aroused to evacuate the intestines, bladder, etc., and can be fed, but he may go to sleep while speaking, eating or riding in a car. The fact that he can be aroused differentiates this kind of sleep from coma. The day and night cycle may be reversed, especially in children, many of whom are drowsy in the daytime and remain awake at night.

In the eye cases there is often paralysis of the third, fourth or sixth nerves supplying the ocular muscles, with or without diplopia, ptosis and strabismus. There is involvement of the motor cerebral nuclei. Quite often the symptoms are transitory, changing from day to day. In the third

group—the hyperkinetic type—there are twitchings and active movements quite similar to those seen in chorea. In 1919-1920 many patients showed myoclonia, the involvement affecting a single muscle or as much as half of the body.

The Parkinsonian type of symptoms is common. Sometimes there is a great tendency to repeat words or phrases; for instance, one patient kept saying "I cannot do it, I cannot do it" many times, until stopped, but seemed quite unable to stop voluntarily. Another patient, picking up a potato to knock off the dirt on the side of a pail would keep tapping the potato continuously until stopped.

There is a pseudobulbar type depending on a predilection of the virus for the mid-brain, but the disease is not commonly found in the anterior horn cells of the spinal cord. Some lesions are found in the corpora striata, giving rise to emotional symptoms.

Quite often one notices an inequality of the pupils. They are sluggish and do not react to accommodation. There is sometimes excessive drooling from the mouth. There may be profuse sweating and loss of control of the bladder and rectum. Other symptoms are delirium, excitement, neurasthenia and psychasthenia. Often there are noted changes of temperament and character. We also find certain changes in the cerebrospinal fluid, namely, increased pressure, increased sugar, and increased cell count, 80 to 100 c. c., but only early in the disease. These signs are absent later on.

The treatment of encephalitis is symptomatic. Lumbar puncture gives relief sometimes, but the chief aids are rest, preferably in bed and out-of-doors, good nursing, and isolation from the family. The drugs which have been used are scopolamine, hyoscine and urotropin.

The Clinical Value of the Reaction

Time.—The reaction of an individual to external impressions is a very vital part of the physical and temperamental makeup; and, when considered from certain standpoints, may be of quite considerable medical interest.

The capacity to think quickly and to act on "the spur of the moment," especially in these days of emergency, is indeed a valuable faculty.

Recently a U. S. Government bulletin, discussing this subject, remarks:

"Reaction time is the interval of time that elapses between the instant a sign or signal is seen and the necessary action started. A driver starts to pass another vehicle when suddenly a third vehicle appears which may block his path. The driver must decide whether to pass the vehicle or drop back. If his reaction time is slow, he may not realize the danger until too late to avert an accident.

"The reaction time of some people is very slow, and undoubtedly is the cause of many accidents. Does the public safety require that such people be denied drivers' licenses? The Bureau of Public Roads is not yet ready to advocate such a policy, but considers that it should be investigated as a possible safety measure."

It is neither necessary nor advisable for us to go thru some real stress in order to learn what our reaction time is. The psychologist will measure it for us in comparative figures. The physiologist will give us a biologic basis for the variations. It remains for the practitioner, however, to avail himself of these data, and to make use of them in his daily routine.

The "reaction time" equally with the capacity to resist infection and the faculty of grasping ideas and originating them has much to do with the endocrine glands, notably the thyroid and the adrenals.

Just as cellular metabolism and muscular tone are dependent upon the hormonic service these glands render to the organism—and of this there is now no longer any reasonable doubt—so in like manner the reaction time, not merely in emergencies, but in the daily physical and mental responses upon which our success or failure largely depend, is determined by the physiologic fulminate which "sets off" our mental and physical *dynamos*—the hormonic balance which arouses or sets in motion so many physiologic responses.

One has but to recall the influence of the thyroid on the initiative by considering which of the many symptoms of hypothyroidism in its various degrees are manifested by features which derange this faculty. The apathy, disinterestedness, loss of memory and don't-care-what-happens attitude which so uniformly are found in myxedema or even in the less serious *formes*

frustes of thyroid insufficiency most certainly are factors which not merely are related to the reaction time, but actually determine it.

On the other hand, in hyperthyroidism the undue facility with which the patient reacts to external impressions is pathognomonic; and more than once we have read that it is believed that the manifestations of genius with the heightened faculty to grasp ideas, to originate them and to initiate are dependent upon these subtle thyroid influences. Certain it is that in frank as well as latent hyperthyroidism the reaction time is increased, oftentimes to the patient's severe discomfort.

To revert to the quotation reproduced above: While it may be some time before the public safety demands physical tests to determine a driver's reaction time before issuing a license, it need not be long before the reader, by considering the reaction time of his patients, both in the anamnesis and the examination, favors his professional position by availing himself of this additional diagnostic viewpoint, and paves the way to a rational organotherapy addition to whatever other treatment may be found to be advisable.

Autosuggestion and Sensationalism.—

Tho the public has greeted the revived theories of autosuggestion as something startlingly new, these theories are almost as old as medicine itself and are deeply rooted in the very earliest beginnings of the science of healing. Any just estimate of the value of these theories must credit them with a very definite potency in a limited field of activity, but in this field they are of acknowledged value. If there is any criticism to be made, it is rather of the sponsors of autosuggestion than of the theory itself, the conduct of some of its leading exponents indicating a deeper concern with popular approval, however attained, than with effective results honestly achieved. And a large measure of the hostility to the protagonists of autosuggestion is chiefly due to their exaggerated claims of its universal application and its unfailing potency, claims too often based on demonstrations with subjects more apt to illustrate the limitations of the method than its universality. The

writer of these lines was a fellow passenger of M. Coué in the Olympic when he returned to France after his visit in this country. During the voyage the little Nancy pharmacist gave a lecture and demonstration before some five hundred passengers gathered in the dining saloon. The writer was present and offered himself as a subject for experiment. An accurate account of that séance, recorded without prejudice, will give food for thought.

Conducted very much along the lines of his other lectures, the séance opened with a general exposition of the theory of auto-suggestion, and, somewhat to the amazement of part of the audience, was followed with the reading of testimonials regarding magic cures effected by the lecturer at his clinic, testimonials comically reminiscent of the Golden Age of Peruna. Then came the demonstration, the lecturer calling upon some members of the audience to come to the platform. Twelve people responded, the writer among them. M. Coué, making a keen survey of the group with his sharp little eyes, selected, not the person nearest to him, but a youth of about seventeen at the extreme end of the line, an adolescent with very red cheeks and nervous manner, obviously with a mentality that would be like soft clay in the fingers of a more dominant personality. The familiar experiment of: "I want to open my hands, but I can't, I can't, I can't," proved an enormous success. The lecturer's next choice as a subject, after another careful scrutiny of those gathered on the platform, was a young girl. His third selection was another girl. Both proved successful subjects. Then, with another survey of the volunteers, M. Coué decided that the individual demonstrations were over. The writer was disappointed. He had come to the platform with the sincere wish to lend himself to the experiment and make a loyal effort to cooperate with the lecturer in order to study the effect. On the platform were several other men, men with square jaws and a determined set of features, but these also had been avoided. The impression made by the careful avoidance of these men was a bad one, and the guiding principle which directed the selection of subjects was manifestly not one inspired by strictly scientific standards. Later, when the collective experiment was tried and the great majority in the audience re-

plied, upon being asked, that they could not open their hands, the lecturer asked if anyone had failed. The writer thereupon declared that he had failed. He was called to the platform and an individual experiment was repeated with him. He faithfully followed all directions, repeated: "I want to open my hands but I can't," yet each time was able to open his hands with ease. After trying several times and failing, M. Coué said: "You are not thinking right." To which the writer replied: "I am thinking exactly as you ask me to. I am afraid the confusion is in your mind and not in mine. You ask me to say that I *want* to open my hands but *can't*. As long as I *want* to, I can. If you wish me to say I *can* open my hands but I *won't*, it would be easy to keep them closed. There is a confusion of thought here, but the confusion is not mine." The writer was thereupon dismissed as a bad subject. Until his own failure, the writer had been somewhat impressed with the success of the other subjects, but it was now obvious that these subjects were easily led to confuse *will* and *power*, and kept their hands closed not because they could not open them but because they did not want to. The conclusion is manifest: Auto-suggestion could be of great help to all those in the audience who had been unable to open their hands and who are sensitive to the influence of an outside, directing (or even misdirecting) mentality. It would be impotent in the case of those who were able to open their hands and who are not easily directed by a mentality which cannot sway their own by so obvious a confusion of will and power. The séance was interesting chiefly, however, for its glaring departure from a strict adherence to scientific method in the selection of subjects.

The School Nurse.—The school nurse, says the U. S. Public Health Service in a recent bulletin, should have good health, sound ancestry, tactful and equable temperament, and love for and understanding of children. In addition to her regular training and health work she would better have some experience in public health nursing, in the essentials of nutrition, and in school sanitation. If she also possesses some knowledge of matters that seem more

properly to belong to the work of the school physician, so much the better.

In general, one nurse should be assigned to from 1,000 to 2,000 pupils, the exact number depending on the physical conditions prevailing in the school district. In rural communities lack of funds usually compels an increase in the quota of children assigned to one nurse. If the school nurses are under the jurisdiction of the health authorities, public health and school work can be combined, thus greatly reducing duplication in home visiting; in this case the quota assigned to one nurse might be reduced to 500.

The "routine" duties of each school nurse, whether working with a full-time or a half-time health officer, comprise (1) a daily meeting, preferably in the morning, in a room set aside for the purpose, for the inspection, instruction, and disposition of all children referred to her who are suspected to be suffering from communicable diseases, from parasitic skin infections, or from any complaint calling for emergency help; (2) frequent inspections of class rooms for discovering unreported cases of communicable diseases, and for noting the cleanliness, temperature, ventilation, and illumination of rooms and the seating of the pupils; (3) giving health instruction to pupils and to teachers; (4) doing follow-up work; and (5) observing the sanitary condition of the school buildings and grounds.

Special duties depend a good deal on whether the school physician is working on whole or half time. Where whole-time physicians are employed the work of the nurse is commonly confined to assist them; where volunteer or half-time physicians are employed her work may include much wider duties, which are, of course, done under the physician's direction. Most usual among such duties is that of making physical inspections for the detection of the more obvious defects of children and the referring of children found to be handicapped to the physician for confirmation of diagnosis and for advice as to proper treatment.

Other special duties, such as holding special classes, open-air schools, and school clinics are rarely undertaken in cities except by physicians. In rural districts, however, where the demand for health work is much greater than the supply, the nurse will often be called upon to act as repre-

sentaive of the state health officer in the control of communicable diseases and in giving instruction on posture, nutrition and general health.

On taking charge a nurse should (1) make contact with the county and local health officers and endeavor to correlate her duties with the other health activities of the district; (2) learn the prevailing state laws in regard to communicable diseases and medical inspection; (3) establish friendly relations with influential persons and organizations interested in the work.

After making a preliminary survey to ascertain the location and accessibility of her schools, the number of pupils, the cooperation to be expected from teachers, etc., the nurse should prepare a schedule for her visits to the different schools, so that the day and hour of her coming will always be known in advance to teachers, parents and pupils. Such a schedule will be of very great help to her in discharging her arduous duties.

Tolerance.—Never was there a time when sympathy and cooperation were so needed, or promised more in the onward march of the medical profession than today. As a well-known physician writes in the *American Journal of Clinical Medicine* (Jan., 1922), mistakes are made by all of us, none of us is infallible, be he physician, specialist, business man, single man, married man; be he a man of high or low social position; be he Jew, Gentile or non-believer; be he rich or poor—none of us is without faults. Continuing he says, "Let us therefore at times take inventory of stock and let us, at least for a little while, consider our own shortcomings, our own faults, our own peculiarities and let us see ourselves in the mirror as we appear to others. Criticizing and 'knocking' others is easily overdone; let us not exaggerate the mistakes and faults of fellow-practitioners of medicine; let us rather enlarge upon the good deeds and acts, the scientific discussions and the well-prepared medical papers that they bring in from time to time, the good results obtained from this or that treatment, the courtesy and respect exchanged between them and let us hope that the specialists will feel that they are in duty bound to be as courteous and respectful, as ethical, as helpful and

friendly to the general practitioner of medicine as the practitioner is to the specialist. Let us not ignore and belittle the other fellow because success has crowned our own efforts—often owing to opportunity rather than our own superiority.

"The faults of our brothers we write upon the sand; their virtues upon the tablets of love and memory."

Anti-Semitism, anti-fraternalism, strife, slander and derogatory statements about others should all be taboo among medical men, in hospital clinics and in medical societies everywhere.

In closing, the author quotes the well-known lines of Will Carleton concerning the country doctor's life:

"In the nighttime or the daytime, he would
 rally brave and well.

Tho the summer lark was fising, or the
 frozen lances fell.

Knowing, if he won the battle, they would
 praise their Maker's name,

Knowing if he lost the battle, then the doc-
 tor was to blame."

That in the fourteenth century (1345-1351) the "Oriental pest," or bubonic plague, claimed a toll in Germany of over a million lives?

That in Madrid not even a privy existed in 1760; it was customary to throw the ordure out of the windows at night, to be removed by the scavengers the next day?

That in Prussia, during the decade 1751-60, "688 out of every 1,000 children born perished before the age of ten, and that in 1761 50 per cent. of the English population died before reaching the age of 20"?

That William Jenner, on May 14, 1776, inoculated a boy with virus taken from a pustule on the hand of a milkmaid who had been infected by her master's cow; on July 1 this boy was inoculated with small-pox virus without the slightest effect, as Jenner had predicted, and in spite of considerable opposition this method was slowly but surely adopted in all civilized countries?

That vaccination was introduced by Dr. Waterhouse in Boston in 1800, and by Seaman in New York in 1801?

Do You Know—

That Hippocrates, 400 B. C., ordered during the pestilence at Athens aromatic fumigation and large fires in the streets?

That in Homer's *Odyssey* reference is made to Ulysses purifying his house with burning sulphur?

That the Romans, amidst their military operations, found time to construct the "Cloaca Maxima" some 2,400 years ago, which not only served for the removal of refuse, but also helped to drain many of the marshes, and constitutes the principal sewer of modern Rome?

That at one time Rome had 14 large and 20 small aqueducts, some of which carried the water from a distance of 50 kilometers?

That during the reign of Tiberius and Nero the *per capita* supply of water was over 1,400 liters a day?

That in Rome between 400 B. C. and 180 A. D. about 800 public baths were installed, among them the "Thermae Caracalæ," which alone accommodated 3,000 bathers at one time?

¹From "Brief History of Hygiene and Sanitation," by Geo. M. Kober, M. D., in *Public Health Reports*, April 6, 1923, Washington, D. C.

The Special Blood-Pressure Number.—

The June issue of AMERICAN MEDICINE will be the most notable ever brought out by this or any other medical publication on the subject of high blood-pressure. The names of the medical men who have promised papers not only make certain that the subject will be completely and comprehensively discussed but with an authority that will give the whole number a far-reaching value. The following are some of the authors whose papers have already been received or are assured beyond all question: Sir Clifford Allbutt, Sir James Barr, Sir Wm. Arbuthnot Lane, L. Strickland Goodall, McNair Wilson, Lambert Rogers, and Frederick Price of England, Adam Wright and A. E. Vipond of Canada, and George W. Crile, Charles E. deM. Sajous, Louis Faugeres Bishop, Reynold Webb Wilcox, J. N. Upshur, Joseph Barach, O. P. J. Falk, Brandreth Symonds, Harold Hays, J. G. Cross, and a number of others of equal prominence.

There is not an English-speaking physician who will not find this special blood-pressure number of inestimable value, for it will give the medical profession a grasp of the subject they have never had before.

ORIGINAL ARTICLES

THE SEWAGE SYSTEM OF THE HUMAN BODY.¹

BY

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The drainage scheme of the body presents many analogies to that of a town and the changes that take place in the one are similar in their consequences to those of the other. Any interference with the effluent of the main sewer of a town is followed by trouble in the drains of every house which discharges its sewage into it. The amount of disturbance experienced by individual houses may differ considerably, depending on their varying levels or on other conditions. Those on high ground usually suffer less than those on lower level. Sooner or later all must suffer from the block, in their drainage and from its far-reaching consequences.

In the human subject, in individuals, various organs and tissues differ in their reaction to toxins. In one the nervous system may show the most marked changes, in another the circulatory system, in another the kidneys, in another the organs of generation, and so on. This weakness of

any particular organ or tissue may be hereditary and may run thru families for generations. Almost everyone has some structural weak spot which is affected before or in excess of the rest of the body.

The conditions present in our anatomy are as follows: We have the gastrointestinal canal, in whose upper portion, namely, the stomach and small intestines, food is digested by the action of acids and of ferments and from the fluid contents of which nutritive material is absorbed into the circulation. The remainder of the canal which is formed by the colon or large bowel simply serves as a cesspool or receptacle into which the intestinal contents, escaping from the small intestine in a fluid consistence, are rendered more solid by the absorption of water. The colon can be removed without detriment and in certain conditions with the greatest benefit to the individual. Any unused residue of food is broken up in this portion of the bowel by means of microorganisms. In the perfectly healthy subject the contents of the stomach and small intestine are free from organisms and are sterile, while in the large intestine varieties of germs exist in immense quantities, and these grow at a remarkable rate. The presence of such organisms as exist normally in the colon does no harm providing the lining membrane of the canal is healthy.

The food products absorbed by the blood-

¹A lecture delivered to "The People's League of Health," London.

vessels from the stomach and small intestine are carried to the liver, whose function is to eliminate deleterious products or to convert them into such components as may be safely carried in the general blood stream to be discharged by the kidneys, skin and lungs.

There are certain glands whose function varies considerably.

The thyroid is a large and conspicuous one. It would appear like the governor in an engine to control the rate at which the processes are carried on in every tissue in the body. It secretes a chemical compound called thyroxin, which, when excessive in amount, produces a condition called exophthalmic goiter. In this condition the pulse becomes very rapid, the eyes project and the muscular system is enfeebled. On the other hand, if thyroxin is secreted in a subnormal amount the tissues of the body are thickened and mental and physical apathy results.

The thyroid would appear to be associated in action with the sexual function and this association is more marked in the female than in the male.

The adrenal gland, pituitary and other ductless glands exert an influence which has probably been fully explained to you already in a previous lecture.

The prostate produces a secretion which is a powerful stimulant both to the man and to the woman. The ovary discharges ova and also apparently pours into the circulation a secretion which exerts a great influence on the woman.

I believe that I can best demonstrate the functions of the human drainage scheme by showing you the changes which result in the body from such defects as are very liable to develop in it.

Please remember that the material as it

leaves the small intestine is fluid and that it gradually increases in density as it travels along the colon. It may become quite hard and even of a stony consistence if retained for a long time in the bowel. This change in consistence is a factor of vital importance in the production of cancer, as we will see later.

Now let us consider what happens if the material contents of the large bowel are not evacuated as freely as they should be, but are permitted to collect and stagnate.

In our civilization it is generally accepted that a daily evacuation of the bowels is sufficient for health. Consequently as soon as the baby's napkin is discarded, it is taught to have a daily action or, in other words, to retain the food taken during the day for twenty-four hours. That this, subject to differences in the character of the food, is the cause of all the chronic diseases of civilization, I have no doubt. It is particularly responsible for the great and progressive increase in frequency of that dread scourge of civilization, namely, cancer, which is rapidly destroying our population.

To illustrate the freedom from these diseases of certain uncivilized communities, I will give only two instances, tho I might multiply them many times. Colonel R. McCarrison spent nine years in the Himalayas, where he did an enormous practice. "During that time he never saw one case of asthenic dyspepsia, of gastric or duodenal ulcer, of appendicitis, of mucous colitis or of cancer."

Dr. Hoffman, the greatest statistician in the United States, writes to me as follows:

"I recently returned from a seven months' trip to South America, where I lived for five months with native Indians and mixed bloods. During the entire period not a single case of cancer was brought

to my attention, altho everywhere I inquired, tho every doctor was asked the question, and altho I personally examined two thousand natives. Your views regarding dietary or nutritional causation of cancer coincide with my own, based upon extended research among native races."

The changes which result from the accumulation of material in a stagnant state in the bowel vary enormously with the vitality of the individual.

It is an illustration of a law which I formulated from a study of the changes which take place in the human body in laborers to enable them to perform their work most economically, namely, that everything that nature does to accommodate the individual to his surroundings in the course of his existence tends to shorten his life.

As I said before, this band, which in the first instance assists in the evacuation of the contents of the large bowel, later obstructs the passage of material thru the constriction it produces, damming back the fecal contents and forming one of the most common seats of cancer. Cancer of the colon arises from the constant irritation produced by the passage of material thru a constricted inflamed segment. Bear in mind that cancer is always produced mechanically and only exists in civilized communities and in proportion to the degree of civilization.

You will now readily realize how important it is to prevent excessive hardening of the feces and their delay by means other than the use of irritating drugs entering into the composition of purgatives which are disastrous in their results.

In consequence of the accumulation of the contents in the large bowel because of the delay in its distal portion and the obstruction produced by the last kink, acquired

bands identical in structure with that forming the last kink, develop for the same purpose of supporting and controlling the loaded large intestine. These are most marked at the points of greatest stress where the bowel is angulated and obstructed by them.

These points are: 1. Where the end of the small intestine is hitched up and obstructed. Others are situated at additional places of attachment and support.

There are two more situations at which obstruction especially occurs, this being where a powerful circular muscle controls the outlet, and next, where a thicker layer of muscle thru its construction essentially interferes with the passage of the contents from the upper into the lower part of this segment of the bowel.

Ulceration and cancer of the large bowel take place only and at all these points of constriction, whether produced by band or muscle, and its frequency increases in proportion as the fecal matter becomes more solid and consequently experiences greater difficulty in its passage thru a narrow orifice.

In the typically feeble subject, on the other hand, the accumulation of the contents of the bowel brings about an entirely different state of affairs. No attempt is made to control the bowel by bands, but it becomes distended and elongated and drops into the lower portion of the abdomen. To that condition of prolapse of the intestines the name enteroptosis is given.

When the bowels are being evacuated this loop is forced into the floor of the pelvis, where it puddles and angulates and forms an insuperable barrier to the passage thru it of solid material which can only be satisfactorily expelled by the use of a large enema.

The obstacle afforded by this elongated loop produces a damming back of material in the rest of the large bowel and its progressive elongation, dilatation and prolapse, no attempt being made to control it by any reaction on the part of the organism.

Here we see the two extreme results of constipation, the chief obstacle to the passage of fecal material being in the one case produced by an acquired band and in the other by an excessive elongation, distension and angulation of the end of the colon.

In the second type there is no point of obstruction at which solid material is held up so that cancer does not develop in the long, loose, large bowel. Cancer of the large bowel only affects those who appear to be vigorous and robust for the very obvious mechanical reasons I have given you.

We will now consider the changes that ensue from the stagnation of the contents of the colon in that portion of the gastrointestinal tract in which food is digested, namely, the stomach and small intestines, and from which the nutriment for all the tissues of the body is derived. Two distinct results ensue; one is purely mechanical, while the other is the infection of the food contents by organisms which extend up from the large bowel into the small intestine and spread often thru its entire length.

In the typical vigorous subject the mechanical changes in the stomach and small intestine are similar to those seen in the large.

There is no relaxation, but there is instead a vigorous endeavor on the part of the musculature to force on the contents of the stomach.

This produces ulceration of the stomach and of the proximal loop of small intestine, the duodenum, but only at the points of

stress. In the case of the stomach these ulcers readily become cancerous.

In the typically feeble subject the stomach and small intestines yield and dilate so that there is not sufficient tension at any one point to produce ulceration or cancer either of the stomach or duodenum.

The degree and extent of the infection by organisms of the contents of the small intestine are vastly greater in the feeble than in the vigorous subject, since in the former there is accumulated in the dilated elongated intestine a large quantity of fluid material in a state of considerable stagnation. In this medium organisms grow with great rapidity and produce an abundance of highly poisonous material which is absorbed into the circulation and carried to the liver.

This important organ does its utmost to perform its excretory and other functions as efficiently as possible. In the first instance it increases in size because of the excessive work it has to perform. Later it decreases and may become abnormally small. Its ducts are frequently infected by their invasion by organisms from the intestine and gall-stones may form in them.

In spite of the action of the liver a variable quantity of toxins and perhaps organisms overflows the filtering mechanism and escapes unchanged into the general circulation.

Consequently every tissue in the body is supplied with a blood containing organisms or their poisonous products while the drainage of the tissues is correspondingly affected to their disadvantage.

What is the effect produced upon the component parts of the body by this interference with their nutrition?

Some years ago Dr. Carrel, working in the Rockefeller Institute in New York,

showed that it was possible to grow all tissues of the body on a microscopical slide, and that as long as they are supplied with nourishment and the by-products are carefully removed, they grow indefinitely. Those tissues which I saw years ago, when the discovery was first made, are still alive and growing steadily. Therefore, we know that a tissue will grow and will apparently never die provided it is properly fed and drained. Death implies defective drainage.

The thyroid gland makes a great effort to deal with the contaminated blood and the results of the contamination. In the first instance it enlarges in size as did the liver and in advanced conditions of chronic intestinal autointoxication it becomes so wasted from overwork that its presence cannot be detected by the finger.

A general enlargement of the gland may be produced without the existence of intestinal stasis by an infection by fecal matter of the food supply and especially of the fluid nutriment of the individual. This is seen in abundance in Switzerland and in portions of Austria, where the material that exudes from the manure heaps escapes into the streams. It is also common among the inhabitants living on the borders of the Great Lakes in the United States probably for the same reason.

Enlargement of the thyroid has been produced experimentally in the healthy human subject by the addition of fecal material to the food and the enlargement of this organ has subsided when the supply of fecal matter has been cut off.

Besides the general enlargement of this gland tumors develop in its substance as it degenerates.

Again in people who are toxic the irritated and overworked thyroid may under the influence of some mental shock or phys-

ical strain start secreting an excessive amount of thyroxin. This increases the rate of tissue change and produces exophthalmic goiter as I pointed out early in this lecture.

It was interesting to notice that in all cases of shell-shock which came under my observation during the war the sufferer was invariably toxic. It would appear that the healthy subject does not react to shock in this manner. This fact was confirmed by Drs. McNair Wilson and White Robertson, who observed a very large number of these cases during and after the war.

The kidneys suffer greatly from the excessive work thrown upon them and undergo degenerative changes called Bright's disease. Organisms are excreted thru the kidneys, producing infective changes in these organs and in the bladder in which they collect.

The nervous system is affected at a very early period and in a way most distressing to the patient. The misery and depression caused by autointoxication may be extreme. In quite a number of cases the sufferer is led to seek relief in drugs, drink or even suicide.

Neuralgia, sleeplessness and inability to concentrate the attention on any work or occupation are only some of the troubles consequent on the fouling of the blood stream supplying the brain and other nervous tissues. Epilepsy, dementia, mania and various forms of paralysis appear as its complications and may often be cured by its removal.

Fat is absorbed and the patient presents an aged appearance. The graceful rounded outline of the body is replaced by a pendulous condition of the flaccid breasts, abdomen and buttocks. The skin becomes wrinkled, stained and covered with a fine

down in places. The perspiration is abundant, and sometimes singularly offensive. The hair, which grows in abnormal situations, much to the distress of the sufferer, falls out from the scalp.

The lowered resisting power of the poisoned tissues allows of organisms obtaining a foothold in them in consequence of any accident, etc., where they grow to the serious detriment of the individual.

In young life the lymphatic tissues of the tonsils and throat become infected and hypertrophied, and call for operative interference in advanced conditions as adenoids and large tonsils.

Later microorganisms grow in the sockets of the teeth extending in from food which rests between the teeth and forms a residue in which organisms multiply, readily producing pyorrhea.

Later rheumatic changes in the joints and tissues, tubercle and a large number of other chronic diseases develop. The respiratory capacity is very much reduced and particularly that portion which is called thoracic. Consequent on this these patients readily develop pulmonary tuberculosis and resulting deformities.

The breasts, uterus and ovaries undergo degenerative changes at an early stage and tumors and cancerous growths are very common in them in this condition.

The muscles of the body are enfeebled and the sufferer is unfit to undertake any muscular exertion. The heart and blood-vessels suffer in a similar manner and the cold, clammy hand and the subnormal temperature of the body indicate the cardiac failure to drive the blood thru the vessels.

In some cases the organisms which grow in the contents of the small intestine produce a toxin which increases the blood-pressure and degenerates the walls of the arteries. In consequence of this the blood-vessels in such a soft organ as the brain readily rupture and produce apoplexy.

I hope that in the short time at my disposal I have been able to give you some idea of the manner in which our drainage scheme effects its normal purpose and of the far-reaching and terribly disastrous results of any failure in the efficient functioning of that scheme. I cannot exaggerate the importance of securing a free effluent thru the several parts of the gastrointestinal tract and so avoiding the necessity for the innumerable operations which are so frequently being performed for conditions which should not exist, if the most simple and elementary precautions are taken to avoid them. Surgery has largely become an operative procedure on end-results, the causes of which are disregarded or not recognized.



PREVENTION OF HEART DISEASE.

We owe it to the great cardiac population of our country to release them from the traditional medical inhibitions, to encourage use instead of permitting atrophy. We owe the public intelligent warning of the seriousness of the rheumatic infections. The public owes us adequate provision of those institutional facilities we need for their care, and suitable training in self-support. Organized groups under medical leadership are necessary to develop the resources of our communities for the prevention and relief of heart disease.—Dr. Haven Emerson (Boston Med. and Surg. Jour.).

A CRITICAL REVIEW OF A SERIES OF MENTAL CASES OPERATED ON FOR REMOVAL OF A FOCUS OF INFECTION IN THE CERVIX UTERI.

BY

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Focal infections of the cervix are one of the most frequent causes of nervous and mental diseases in women. That this is so is fully demonstrated by the results obtained from removing this focus in a series of mental cases which it is my privilege to report to you at this time.

The great importance of this condition as an etiologic factor in functional and organic alterations in the female nervous system has only been known to very few of us up to the present time. That a close relation existed between diseases of the female generative system and nervous and mental conditions has, however, been a well-recognized fact.

The word hysteria, used so frequently in connection with these conditions, is derived from the Greek *hystera*, meaning uterus. It is interesting to note, in the light of our present knowledge, that the old observers, who connected up the uterus with nervous and mental conditions, were correct in their observations, while later observers, who place the responsibility on altered ovarian function, are undoubtedly wrong. It is the purpose of this paper to show that the relation between uterine disease and many cases of nervous and mental disorders in women is one of direct cause and effect.

From my observations, on a large series of private cases I have figured that approximately 49 per cent. of all parous and 13 per cent. of all nulliparous women are carrying a chronic infection of the endometrium of the cervix which may, at any time, under an increase of either a mental or physical load, produce the most disastrous results.

It would seem almost imperative to consider briefly, at this point, some of the work of the pioneers who have so fully demonstrated focal infection in other locations to be, beyond all manner of doubt, one of the most frequent causes of ill health and disease.

Over twenty years ago Meyer¹ considered the "Tonsils as Portals of Infection." In 1907 Brown² reported the "Remote Effects of Tonsillar Infection." The previous year Adler³ presented his "Remarks on Some General Infections Through the Tonsil." Then in 1912, Billings⁴ reported his work on "Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis." The following year Rosenow^{5, 6}, in April, reported "The Etiology of Articular and Muscular Rheumatism"; and in November of the same year "The Production of Ulcer of the Stomach by Infection of Streptococci." Altho much of this work has been severely criticized, none of it has been disproved.

During the year 1914, King⁷ made a preliminary report and in 1917 his paper, "Further Observations on the Connellan-King Diplococcus Throat Infections," was published. In the meantime Thoma's⁸ book on "Oral Abscesses" was placed before the profession. In 1919, Bell⁹ laid particular stress on "the three T's" in an article entitled "Relation of Teeth, Tonsils and Intestinal Toxemias to Disease of the Eye."

"The Rôle of Focal Infection in the Psychosis" was reported by Cotton¹⁰ this same year. The fact that blood reactions to these foci of infection occur was pointed out by Hastings¹¹ as early as 1914.

A vast amount of work was also done during this time on infections of the appendix, gall-bladder and intestinal tract. This work is of such volume and importance that it would be unfair to refer to any special part of it here. These same facts hold good in reference to the studies made on infections of the prostate and seminal vesicles.

Just as a correlation of the work of many was necessary to place the rôle of focal infections as a cause of systemic and nervous diseases upon a firm basis, so the research of not a few contributed to the establishing of the fact that the cervical endometrium is frequently the site of a focus of infection, and is second to no other as a causative factor in producing many of these pathologic conditions.

Let us now review briefly some of the most important of this work. Montgomery¹² in 1900 published in his book a classical article on "Endocervicitis." His description of this condition is most accurate and complete. He fully recognized its cause as due to an infection of the epithelial lining of the cervix from the external to the internal os. For the cure of this condition, in cases not benefited by various medical applications, Montgomery advised chemical cauteries, Paquelin cautery, galvanic electricity and, under varying conditions, such operative work as Emmet's and Schroeder's. He described, also, an operation advised by Martin in which the cervix is split and the cervical mucous membrane from both the posterior and anterior lips is completely removed from above the

diseased area to the external os. He also mentions Thomas' method of removing the cervical endometrium from the internal to the external os—showing that he realized that the diseased condition extended to the internal os.

The lymphatics of the cervix and uterus and their relation to the broad ligaments, tubes and ovaries were thoroly studied by Leopold¹³ in 1874; also by Piersol¹⁴ in 1896. Kundrat and Engelmann¹⁵ in 1873, and Hitchman and Adler¹⁶ in 1908, pointed out the fact that most, if not all, the changes in the endometrium above the internal os which were supposed to be the result of endometritis were really manifestations of the menstrual cycle. Their findings were confirmed later by Curtis¹⁷.

Sturmdorf¹⁸ in 1916 published a paper in which he correlated most of this work and advanced his theory, backed up by very adequate proof, that the infection in the cervical mucosa was the cause of the greater proportion of cases of uterine and tubo-ovarian disease, due to absorption thru the lymphatics. In this paper he described his operation for removal of the cervical endometrium from the external to the internal os, with a relining of the canal by means of a tubular flap resected from the vaginal surface of the cervix.

In 1919 I reported the first series of cases, from a clinical standpoint, operated upon for complete removal of the cervical endometrium. In this series I utilized Sturmdorf's technic with only such modifications as unusual conditions necessitated. It was in this same paper that the first report was made of any mental cases operated for a removal of a focus of infection in the endometrium of the cervix. These cases were the first ones of the series I

am reporting here. The operative work on these began in 1918 (Langstroth¹⁹).

The first cases ever operated upon, with the preconceived idea of obtaining mental recoveries by removal of a focus of infection in the cervix, were, I believe, those I operated for Dr. D. E. Drake at his sanitarium in New Jersey in 1917. These were reported in my paper on "Focal Infection of the Cervix and Its Relation to Systemic and Mental Diseases," *Medical Record*, May 21, 1921 (Langstroth²⁰). In this same paper I called attention, for the first time, to the probability that absorption of toxins and bacteria into the blood stream results from a focus in the cervical endometrium.

This brief résumé of the work that has been done seems to prove beyond doubt that foci of infection occur in the tonsils, teeth, sinuses, intestinal tract, etc., in both men and women; and that, in addition, foci of infection are very common in the reproductive organs, in the female being localized primarily in the endometrium of the cervix uteri and in the male in the prostate and seminal vesicles.

That focal infection of the cervix has been, in the past, so frequently overlooked as a cause of these abnormal conditions, is due to several facts:

First, the cervix is so frequently infected that, by many, the resulting leucorrhea has come to be looked upon as a normal condition. This is wrong because any perceptible amount of vaginal discharge means cervical infection, excepting a slight increase at the menstrual period and during pregnancy.

Second, cervical infections occur very frequently in the virgin, and many physicians lack the moral fortitude necessary to insist on a thoro examination of these cases. (The cervical infection in these cases, I believe, often results from a primary focus in the tonsils.)

Third, there are many cervices carrying

very virulent infections which show only very slight changes to the sight and touch. This is probably due to the fact that the patient's resistance in these cases is high. It is this type which can only be recognized after extensive clinical experience in this field of diagnosis.

There is so much to be said about the relation of surgery to the anatomy and physiology, both normal and pathologic, of the female generative organs that only the briefest reference can be given here to some of the most important points. This aspect of the subject has been more fully covered in my former papers (Langstroth^{19 20}). The probability that many cases of cancer of the cervix result from the constant irritation of a chronic focal infection was discussed in my paper, entitled "Plastic Conical Enucleation of the Cervix; Surgical Indications and Clinical Results in Seventy-five Cases," *Journal of the Medical Soc. of N. J.*, October, 1919 (Langstroth²¹). Sturmdorf seems to have had the same ideas in his valuable paper, "The Clinical and Laboratory Manifestations of Malignancy," the *Archives of Diagnosis*, N. Y., October, 1916 (Sturmdorf²²).

The necessity of completely removing the infection cannot be too strongly emphasized. The important and difficult fact is to determine if the infection is still localized in the cervical endometrium. After an infection has existed for a time in the cervix it always spreads thru the lymphatics to the uterus, tubes and ovaries, making it extremely difficult to decide what operative work is best to do in order to completely eliminate all infected tissue and still be as conservative as possible. It is only after extensive clinical and surgical work in this type of cases that one is able to judge, with any degree of accuracy, which cases will respond to cervical enucleation and which

will need removal of one or both tubes and ovaries. In fact, some will demand panhysterectomy in order to eliminate completely the affected tissue. Any operative method which completely removes the cervical endometrium from the external to the internal os will eliminate the primary site of infection.

If one devotes much thought and time to any special subject he is likely to become perhaps a little overenthusiastic about it. Therefore, it was with great interest that I received only last week a reprint on "The Focal Infection of the Cervix," by Bernhard Friedlaender²³ of Detroit, confirming all of my findings on this subject. I will quote from him briefly. He, after reviewing the anatomy of the cervix, says: "The value of the work of Arthur H. Curtis, Hitchman, Adler, Kundrat, Mange, Sturmdorf, H. B. Matthews, F. W. Langstroth, Jr., should be universally acknowledged." Again, "The enucleated endocervical mucosa was sent to the laboratory in every case operated on for culture by the direct method and for pathologic examination. In most of my cases the streptococcus or colon bacillus, or a combination of the two was prevalent; staphylococci were next in order, but gonococci were very rare. The reason for finding so few gonococcus infections is probably that I never do the cervical operation on an active case of gonorrhea."

"All cases were reported by the pathologist as chronic cervicitis."

This agrees almost exactly with the series of cultures which I reported in my paper on the "Preservation of the Procreated Function in Women," *New York Med. Jour.*, June 5, 1920 (Langstroth²⁴), as follows:

"Cases cultured, sixty; negative, six; streptococcus hemolyticus, one; strepto-

cocci not specified, nine; staphylococcus albus, four; staphylococci not specified, three; micrococcus albus, four; colon bacillus, nine; bacillus pyocyanus, one; common organisms, five; mixed infections, eighteen. Among the mixed infections were found some of these various combinations: 1. Streptococcus aureus and gram negative bacteria; 2. gram positive and coccus not determined; 3. streptococcus, staphylococcus and tubercle bacilli; 4. streptococcus, staphylococcus and bacillus subtilis; 5. bacillus coli and bacillus Hoffmann; 6. gram negative bacillus, staphylococcus albus, and bacillus coli; 7. bacillus coli and gram negative; 8. staphylococcus and bacillus coli; 9. staphylococcus, streptococcus and bacillus coli; 10. staphylococcus and smegma bacillus; 11. streptococcus and bacillus coli; 12. micrococcus albus and Friedlaender bacillus; 13. streptococcus and micrococcus."

In the mixed infections streptococcus occurred five times, making a total of fifteen cases with streptococcus infections; the colon bacillus six times, making a similar total for this organism; so that thirty cases, or 50 per cent. of this series, had an infection of either one or both of these bacteria.

The question of gonorrhreal infection and the indications for operations in this condition in women I have considered in detail in my paper, "Gonorrhea in Women from the Aspect of a Focal Infection," *N. Y. Med. Jour.*, July 5, 1922 (Langstroth²⁵).

In summing up this work, Dr. Friedlaender says: "There were no deaths in forty-two cases and a cure was obtained in every instance. In many cases, in addition to the plastic conical enucleation of the cervix, other plastic work was performed on the perineum and anterior vaginal wall, piles were removed, and abdominal sections were done for the removal or correction of diseased adnexæ of the uterus, and for the restoration of the organ to its normal position. We dealt with five groups of cases,

namely: (1) Lacerated, infected cervix; (2) rheumatism; (3) leucorrhea; (4) pro-cidentia uteri with infected cervix; (5) sterility due to infected cervix; (6) psychasthenia."

Thus we see that Dr. Friedlaender's findings agree exactly with those of Dr. Sturmdorf and myself.

I will now present, briefly, a few histories of this series of cases.

Number 6. V. H. Married woman, age 28, on her first admission in April, 1917. Was said to be unusually bright and too much petted and spoiled as a child. At the age of sixteen she had a nervous attack which lasted about a month. She attended private school and a business school, but made no progress in either. She was jealous of her sisters and her husband and there was considerable unpleasantness in the home. Had two children. Her first attack was at sixteen years, the second when she was 22 years old. She was then pregnant and her sister died. She became suicidal and was sent to a sanitarium, where she recovered after eleven weeks. In May, 1913, she had a third attack, when she was again pregnant. She was in a hospital for sixteen months, being discharged in November, 1915. Fourth attack was when she was admitted to State Hospital. Thought she was going to be burned alive. Onset about one week. Fifth attack was January, 1920, when she was again pregnant and was returned to the State Hospital. This patient has been tested and treated for infection and had a plastic conical enucleation of the cervix. She is still in the hospital and her condition is slightly improved.

In connection with this history, Madame S. Korongold-Vinaver, in the annals of the Pasteur Institute, 1921, Vol. 35, pages 834-844, states her belief that puerperal infections have their inception in chronic infection of the neck of the uterus; she questions if this does not depend on some former systemic infection such as the gripe, etc.

Number 14. M. I. Married woman, age 35; four children; been eccentric four years; had screaming spells and at times was mute; suicidal. Admitted December, 1918. Physical examination showed infected teeth and tonsils, cervix lacerated, congested, cystic. Vaginal discharge uterus and sub-involved. Nineteen teeth were extracted, tonsils were removed. stomach test gave normal HCl, with streptococcus and staphylococcus infection. On March 13, 1919, plastic conical enucleation of cervix was performed, with good results. No improvement was shown following other work until the cervical operation. Her confusion passed away and she began to show good insight and fair judgment. She left the hospital June 29, 1919, her condition greatly improved.

Number 19. H. R. Married woman, age 35 at the time of her admission to the hospital, April 25, 1919. Infancy and childhood normal. Married at age of twenty and was happy. Had three children. Onset of trouble was said to date back six years before admission when patient was told she was suffering from obscure uterine condition and operation was advised. She worried about her condition, became depressed and fearful, had fainting spells until she was practically an invalid. Pelvic examination showed complete uterine prolapse with marked cystocele and rectocele. Cervix could easily be turned out thru the vagina and was fully two inches in diameter. There was a marked erosion about the external os and a profuse discharge from the cervical canal. On April 26 plastic conical enucleation of the cervix, repair of rectocele and cystocele, also repair of the perineum was performed. Patient was discharged from hospital June 22, completely recovered from her operation and in good condition mentally.

Number 24. E. W. Widow, 38 years of age, admitted April 6, 1919, to the State Hospital. Early life uneventful, married at the age of 26, had three children, one miscarriage. Onset was gradual, following death of her husband six months before admission. Became depressed and suicidal, was decidedly emotional. Her tonsils were enucleated; plastic conical enucleation of cervix was performed May 1. This patient's recovery was gradual but continuous and in September she was able to go on a visit. She returned to the hospital after a few days and left finally on October 22, fully recovered, and since that time has shown no special mental condition.

Number 29. R. H. Colored woman, age 31, married, five children. Became suddenly excited after birth of last baby in May, 1918. Remained in this condition for several months and was sent to Ward's Island. Recovered from that attack. Onset of second attack was sudden, two months before birth of another child, in May, 1919. Became destructive, noisy, attracted attention on streets, was put in jail and finally admitted to State Hospital in July, 1919. She had badly infected tonsils, which were enucleated and some improvement was noted. August 19 plastic conical enucleation of the cervix was done and the cervix was found to be in very poor condition. One week after this operation she apparently cleared up and at the time of her leaving hospital, September 17, she was oriented, with full insight and good judgment. February 1, 1920, she was reported by the field worker to be fully recovered.

The whole series has been arranged in the form of a chart, the size of which makes it impossible to print.

The first analysis was given in my previous paper on "Focal Infection of the Cervix and Its Relation to Systemic and

Mental Diseases," the *Medical Record*, May 21, 1921 (Langstroth²⁰).

We find the following interesting facts so far as the bacteriology of these fifty cases is concerned: The stomach and cervical cultures were both complete in 31 cases, the stomach culture in 38 and the cervical culture in 39. In the complete cases we find the same combination of bacteria or the same kind of bacteria if only one is present eight times as follows: Streptococcus and colon bacillus in both the stomach and cervix four times, streptococcus three times, colon bacillus once. In seven other of the cases we find one of the same bacteria present in both the stomach and cervical cultures, either a streptococcus or the colon bacillus, and in three negative cultures from both, making 18 or over one-half the cases, or to be exact, 58 per cent., in which the same infection was found both in the stomach and cervix. Does this not point very strongly to either a lymphatic or a hematogenous transference of bacteria? Out of the 50 cases, thru some error of routine, no culture from the cervix was taken in nine, two were reported as common organisms, leaving 39 cases with the following bacterial findings: Streptococcus combined with the colon bacillus seven times; streptococcus alone eleven times, colon bacillus alone seven times; staphylococcus or micrococcus albus four times; thus making a total of 18 cases infected with the streptococcus or 44 per cent.; colon bacillus fourteen infections or 34 per cent., and of these two either singly or combined twenty-five or 60 per cent. It is of interest to note how closely these findings agree with those detailed in the first series, and as near as the writer can judge they agree very closely with the find-

ings in his private cases. They likely represent the bacterial flora of chronic infection of the endometrium lining the cervical canal. Of the cases that recovered after operation we find 52 per cent. infected with one or both of these same organisms, or if we wish to consider that the two reported as common organisms were not completely worked out and were really infected with one of these bacteria it would bring the total up to 64 per cent. The same relation of these two germs was found in the cases improved from the operation, it being 63 per cent. It certainly seems more than a coincidence that the percentage of the whole series, the cases benefited and the cases with mental recoveries, should be so nearly the same for these two types of bacteria.

All the cases exhibited the clinical signs of chronic endocervicitis, with two exceptions; those cases in which the examination indicated the necessity of pelvic work were excluded from this series.

An attempt has been made in the chart to distinguish those cases that had an infection in addition to a laceration of the cervix and those that had an infection without laceration by designating the first as lac. cervix and the latter as infected cervix. The fundamental object was to remove completely the infected cervical endometrium. In addition to the cervical operations, ten perineorrhaphies were performed, in one of which an additional cystocele operation was done, and one or both tubes and ovaries were removed in two of the cases. There were no deaths and a gynecologic cure was obtained in practically all the cases with a marked improvement in general health and a gain in weight that was very pronounced in most.

The following mental results were ob-

tained: Eighteen cases were improved after removal of foci in teeth, tonsils, etc., but none were cured. From removal of the focus in the cervix twenty-one cases were improved; fifteen of these had shown no improvement from the removal of the other foci, the other six had shown some improvement from the former work. After removal of their infected cervical endometrium seventeen cases are reported by the hospital to have recovered mentally; eleven of these showed their first improvement after removal of foci in the teeth, tonsils, etc., the other six cases showed no improvement till the cervix operation was done; then they recovered.

The twenty-one cases improved were of the following mental groups: Unclassed, three; exhaustion delirium, one; manic depressive insanity not classified, three; manic depressive insanity depressed, four; epilepsy, two; constitutional inferiority, one; dementia praecox, three; paranoid condition, two; psychasthenia, one; imbecile, one. The seventeen cases reported cured were as follows: Manic depressive insanity not classified, four; manic depressive insanity, manic, two; manic depressive insanity, depressed, five; toxic psychosis, one; hypomania, one; neurasthenia, two; dementia praecox, one; unclassed, one.

When this series of cases was first reported, in 1921, a great deal of doubt was expressed as to the permanency of the seventeen mental recoveries. I will now present to you a complete report, recently received from Maude B. Rue, statistician at the New Jersey State Hospital at Trenton, in which the present mental condition of each case is recorded. This report was made approximately four years after the operations were performed.

According to this report the mental con-

dition of all the patients, except the sixteen which follow and one recovered case which died, No. 37, has remained the same. Only three of the cases, formerly reported as recovered, have relapsed into the unimproved group, namely, cases 21, 38 and 46. Thus fourteen of the seventeen cases formerly reported as mentally recovered have remained in the mentally recovered group. On the other hand, the following cases, formerly reported as improved, are now mentally recovered, cases 28, 35, 42 and 47. Two of the unimproved cases are dead, cases 30 and 31. Of the improved cases only three have gone back into the unimproved group, cases 32, 40 and 43. An equal number of the unimproved cases are now in the improved group, cases 34, 45 and 50. Of the unimproved group, one has died, case 27.

We thus see that the general trend in this series of cases is toward permanent improvement. In fact, with one recovered case having died, there are now, after four years, nineteen mental recoveries as a result of this operative work. Of course, it must be understood that these cases were thoroly cleared of all other known areas of infection before they reached the Gynecological Department.

I feel justified in drawing some of the following conclusions from the study of the work:

The cervical endometrium is frequently invaded by pathogenic bacteria and thus becomes a focus of infection which causes alterations in the cell chemistry, due to the absorption of toxins, resulting in marked systemic and mental manifestations and diseases.

Various types of the streptococcus and colon bacillus, occurring either singly or combined, seem to be the most frequently

offending organisms, but harmful results from the presence of the various staphylococci must not be overlooked.

The same kinds and combinations of bacteria are recovered with great frequency from more than one area of the body, as the above analysis plainly shows. This points very strongly to a hematogenous or lymphatic distribution of these bacteria.

Certain portions of the body seem prone to become the site of these foci of infection, partly on account of their histologic structure and partly because their function, especially in the adult, is limited. These areas are largely represented by the tonsils, teeth, especially when the nerve is dead, sinuses, and other portions of the intestinal tract, appendix, cervical endometrium, the seminal vesicles and prostate gland.

The bacteria and toxins of chronic focal infections are, I believe, selective, some showing a predilection for one structure of the body and some for another. This likely explains why some cases having foci of infection suffer from some manifestation perhaps in the joints or intestinal tract, etc., and again others from nervous or mental disturbances, altho they may be a structural weakness inherent in the part secondarily affected.

In order to obtain results all the active foci must be sought out and removed, and vaccines given. Vaccines or foreign proteins do not seem to be able to destroy the infecting organisms, but do seem to aid in neutralizing and combating the toxins.

Just as in arthritis, the best results in nervous and mental diseases are obtained when the foci are removed early in the course of the disease; little benefit can be expected when fibrous changes have taken place or nerve tissue has been destroyed.

We are now fully justified as a result

of this work in placing focal infections of the cervical endometrium on a firm basis, second to no other, as a factor in the cause of systemic, mental and nervous manifestations and diseases. And while we should not promise too much from a removal of these foci, still no one would seem justified in treating many of the chronic diseases today without having all these foci sought for and removed by someone especially trained in the respective field.

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WHERE ARE YOU?

BY

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Harvey Wiley, M. D., that 79-year young sage and associate editor of *Good Housekeeping*, in his paper at the fourth annual meeting of the American Academy of Applied Dental Science stated frankly that the mouth is the most important part of the human body. After months, yes years, of deliberation I have come to the conclusion that the professional conception, human realization and cooperation of this truth is one of the most valuable contributions for a longer and healthier life that has been made in a long time. Dentists will undoubtedly say, "Why, we have been saying that for years." Many doctors of medicine now say, "That is ridiculous." With these conflicting statements, what constructive mes-

sage will the laity develop from this situation?

In the professional world there is great need of harmony and close cooperation between the doctor of (health) medicine and the oralist. I had hoped for years that that sentence might read "the doctor of medicine" and the "doctor of dentistry." Perusal of dental literature, proceedings of dental societies and as close a study of existing dental practice as can be obtained forces me to say that dentistry as a whole as now represented and practiced is but superficially interested in the problems of health.

Certain leaders in the dental world have stated that "dentistry can add ten years to the human life"; that "good dentistry is invaluable to good health." These slogans to be valuable, true to humanity and practical to the profession, should represent something real, workable, honestly delivered, and capable of being taught to others. There is a great volume of differing opinions in the everyday practical working interpretation of the above slogans. How many of the 45,000 practicing dentists in the United States practice every day in their offices from a bacterial conception of the slogan "dentistry can add ten years to the human life"? An examination of all the dental college curriculums shows that most of them are teaching dental students that they can even cure alveolar abscess by placing certain drugs in the root canals of certain teeth; that pulpless teeth are more serviceable to humanity than no teeth, etc. If this is so, what force is teaching humanity to be interested in arresting the initial decay of the enamel or in proper living, or in the pre-natal influences that will give posterity, teeth worthy of being in the human jaws? Are all your efforts

¹Read before the New York Chapter of the A. A. A. D. S. by Dr. Bertram Ball, New York City.

in the prevention of tooth pathology simply high-sounding terminology for professional digestion only? Must humanity continue to eat the enamel-destroying foods, neglect mouth cleanliness, increase the dividends of automobile builders and rouge manufacturers? The laws of Nature are not influenced by the present desires of the disinterested and uninformed present-day society about the importance of mouth conditions. I will say no more along this line unless someone wants to take up the challenge.

Can the part that creates the greatest bacterial flora and the greatest mechanical force in digestion be cared for wisely by a group dominated by the commercial rules of good mechanics or jewelers? Some present and past dental writings and practice make me think of the decaying apples and oranges under the trees returning to their original state and having done no one any good.

The oralist has accepted the laws of biology as of first importance in his study of mouth conditions. A patient may have visited the dentist regularly and brushed the teeth three times a day, but the mouth will be breeding disease because of any one of the following conditions:

Rough surfaces of teeth at gingivæ,
Infected tonsils,
Pulpless teeth,
Sinus infection,
Overeating,
Faulty elimination,
Insufficient water intake,
Faulty mastication,
Faulty oral service,
Retarded tooth development,
Faulty diet,
Lack of proper home care,
Unclean crown- and bridge-work,

Residual infection where teeth have been extracted,

Foreign cell development.

The oralist considers his oral and antral diagnosis of as great importance and in a large number of cases of greater importance as any one of the other specialties dealing with the human body. He believes in the orderly process of Nature. He knows that the human cell reproduces and functions on indefinitely unless overcome or interfered with by bacteria or their toxins. He considers our present proven knowledge in the sciences of bacteriology, serology and bone pathology to be more important than customs handed down painlessly from an ignorant past. He believes that his appreciation of what a proper diet and right living can do will in the coming generations build a body so strong against diseases that the average length of human life will be easily up in the sixties. "A clean mouth promotes good health."

A prominent social welfare worker in a recent national conference stated his opinion, that humanity's problem of good teeth was starting dental hygiene earlier in life. This statement is just 30 per cent. true. Another reason for the new profession—oralogy. Social and economic phases of professional practice to be solid should be built around the scientific standard.

A recent editorial in *Nation's Health* stated, "Therapeutics attained maturity first, but the future belongs to prophylaxis." Graceful acknowledgment. Prophylaxis and the digestion of foods should begin in the human mouth. By what license should civilization authorize jewelers to either increase that bacterial development or forcibly inject bacteria thru the lining membrane of the alimentary canal, where the said condition is under the greatest

pressure existing anywhere thruout the twenty-eight feet of that tubing?

The license to practice medicine or dentistry is bestowed by the people upon the members of those noble professions. The leaders in the American Medical Association, recognizing facts, not past theories, have decided to tell the people medicine's story. The same is true of the leaders in the science of oratology. We believe it to be our opportunity for service. We have no desire to add to the present-day criticisms and confusion. We hold tenaciously to science for biologic living and constructive health work. Oratology not only informs a patient that there is disease, wrong living or injudicious eating, but makes life extension and health happiness practical for both the practitioner and the patients. It can no longer be said that thoro prophylaxis is to be the neglected infant of the professional family. The story in pictures has been started. The results with patients already prove its value. When sufficient and capable practitioners are known and located the national education of the people as to the value of this work will be started. Prophylaxis is recognized in all studies of the various phases of Nature's cycle as the dominant force for the extension of human life. In the development of this profession the American Academy of Applied Dental Science welcomes the association and aid of all those members of the medical and dental profession who are interested in this higher service for the good of not only a new profession, but humanity, in one of its present-day fundamental needs.

Various national leaders in sociology are deeply interested in this movement. Your attitude will demonstrate to what extent the average professional man is interested.

A clean mouth promotes good health.

GOLD DIGGERS.

BY

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This is a tale of horror and it is not fiction. It might have inspired Edgar Poe to have given to us another beautiful and ghastly tale, he who wrote the "Gold Bug," "The Fall of the House of Usher," "Silence"—the latter being perhaps the most beautiful and terrifying of all his tales—would have perceived the grim philosophy of this, and described poetically and tragically the ghouls I am going to introduce to you. Being but a medical man, with no literary knack, I shall merely endeavor to acquaint you with facts.

Students of economy, who have plenty of leisure, have tried to figure the amount of gold which annually goes into the grave, and is not recovered, people are buried whose teeth are filled with the precious metal, or who have wished to be buried with their favorite jewels, and our economists bemoan this waste of gold—gold which human toil had brought to light, and which there is increasing need. They do not know that an infinitesimal part of the metal is actually reft from the dead, but not recovered from the grave.

Cremation has become fashionable, its advantages have been obvious to sensitive minds, from the esthetic standpoint, it is ideal, to disappear completely, immediately, without becoming a prey to the "Conqueror Worm," appeals to a sophisticated brain. The process is rather mysterious; we know that the ashes are returned to the family, if they so wish, or in some instances kept in labelled vessels, which are placed in pigeon-holes, in the crematory building. This, at

least, being the European custom, which was taken from the ancient Greeks.

America is a young and enterprising country, intensely practical, and the home of efficiency experts, Taylorization and of the packing industries. The Armours have taught us that a slain ox whose meat goes into the making of food can also furnish tooth-brushes, face powder, fertilizers, combs, soap, animal extracts, etc., and that by-products are not to be overlooked. In Europe, nobody had realized that so much material was being wasted in the slaughter-houses, and Europeans being more bent on enjoying life than on making money, have not been impressed by our practicality. Therefore, they have not made tooth-brushes out of the ox's bones, ladies' combs out of its horns, they have contented themselves with eating its flesh and perhaps curing its hide for commercial purposes. They have been as unconcerned in dealing with dead humans as they have been in dealing with dead cattle; they have buried their dead, cremated them, without figuring the amount of gold lost thereby, and without endeavoring to recover it, or bemoaning the apparent failure to do so.

In this world of ours, however, there are men who realize that it is not wise to let gold disappear. That the possession of gold is the key to happiness, that "the dead cannot rise," therefore, the appropriation of their gold is a perfectly safe and easy process, and, in a measure, a harmless one.

Gold refiners are good-natured and practical people, people of discretion, who attend strictly to their own business, who are willing and ready to buy gold and have no manifest interest in ascertaining its sources. One of them, however, having an inquisitive turn of mind and a friendly disposition, who won the confidence of one of these providers,

told me this story. He had bought gold from a man whose calling he ignored and who visited his office at frequent intervals. One day in the course of his conversation, my informer asked the man where the gold came from. He did not hesitate to answer that he was the manager of a crematory and as a side-issue took the ashes of the dead, sifted them and recovered the gold they happened to contain.

Would you call the manager of the crematory a ghoul? He probably is the good-natured father of a numerous family and the gold of the dead is transmuted into dresses for a bucksome wife, children's socks and shoes, perhaps even a Ford automobile which takes the happy family to the beach in summer. Surely the dead do not miss their gold. If from the Elysian fields they can still watch us poor humans, so many ants struggling in and out of the ant hill, those who were philosophers would smile at the happy circumstances of the manager's family. While if among them there happens to be efficiency experts, they would certainly wonder if the time is coming when the Senate introduces a bill requiring every dead American citizen to be cremated, his ashes sifted in order to swell the treasury!

193 Waterman St., Providence, R. I.

Prescription of Service During "Dentition."—Barnes (*Med. Summary*) says that for a child six months to a year old:

R Tr. Verat. Viridi.gts. x
Tr. Passiflora Incarnatti. .gts. xv
Aquæ Cinnamoni.qs. ʒiv
M. Sig.—30 drops every hour until relieved.

You can increase the dose for older children, say, five and six years old, to twice the amount. Old drugs are very good if employed right.

CERTAIN FACTORS TO BE CONSIDERED IN JUDGING THE EFFECTS OF PROHIBITION ON THE USE OF NARCOTICS.

BY

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Former Editor of *Medical Economist*;
Former Member of Congress; Member
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Bar Association.

The history and record of the development of the present narcotic situation, if it were more widely known and appreciated and the scientific literature on the subject of narcotic addiction more widely known and recognized, would make any query as to alcohol prohibition laws having any effect upon the use of narcotic drugs wholly unnecessary.

In my ten years of experience and contact with this subject in the capacities of state legislator, doctor, medical journal editor and Congressman, I cannot recall of any reputable authority on this subject of narcotics and addiction making a statement to the effect that prohibition would or had increased or influenced the spread or consumption of narcotic drugs.

Indeed, every report or survey entitled to scientific credence and the foremost scientific authorities on this subject either men of personal experience in clinical work or of study into its history and literature have, I believe, emphatically declared that the coming of the Prohibition Amendment has had absolutely nothing to do with the development of the present narcotic drug situation and conditions.

Moreover, the actual elements and factors in the causation of existing narcotic

conditions are so completely a matter of record and so incontrovertible to be traced in that record that it is absurd to look outside of the narcotic drug history and record of the past ten years to find the incontrovertible machinery of development of the present situation.

To one at all conversant with the history of the past twelve years with its various promotions and experiments and publicity and propaganda in this matter of narcotics, the absurdity of the claim that prohibition has had any effect in the causation of existing narcotic conditions is apparent in the fact that the present narcotic conditions had been developed by the same factors years before there was either a national prohibition or serious talk of it.

The first development and spread of smuggling and peddling came in New York State following sensational publicity and the enactment of the Boylan Law in 1914.

It is more than a coincidence that the sort of advertising and sensational publicity which has always preceded this type of legislation has also always been followed by the development of underworld commerce and spread of addiction of non-therapeutic origin among the youthful and curious.

The events of 1914 on a smaller scale in the State of New York exactly follow the history of identical forces exerted since 1919, which is the period in which the present situation was developed.

The record of this is so voluminous that it is not necessary to do more than state the fact in this place and call attention to the fact that there was at that time no prohibition of alcohol, so that the crisis and beginning of smuggling and peddling and spread of addiction among the youthful could not have been attributed to the

Eighteenth Amendment which was not to exist for another six years.

In what is undoubtedly the most scientific and accurate analysis in the form of official report coming from a standing committee of any scientific organization, the report of the Narcotic Committee in the American Public Health Association, rendered October, 1919, is stated:

"We would emphasize the fact that cocaine, alcohol and other drugs of indulgence do not fall into this definition" (of opiate addiction) "and they and their problems of handling, treatment and control are entirely different and distinct from the matter of opiate addiction disease." (This report appeared in the *American Journal of Public Health*, January, 1920.)

Dr. Charles E. Terry, executive of the Bureau on Narcotic Drug Research, of New York, stated before the hearings on the recent Porter resolution:

"I do not think there is any connection between prohibition and addiction."

In AMERICAN MEDICINE, Special Narcotic Number, December, 1917, is contained a preliminary report by the Whitney New York State Joint Legislative Committee which carried on for two years the only open and exhaustive investigation yet made on the subject of narcotics and a remarkably clear analysis, by a Federal Government official, of the situation and its causes and development since the passage of anti-narcotic legislation in 1914.

No mention is made in either of these most reliable and authoritative statements as to any increase of use of narcotic drugs caused by prohibition of alcohol.

The final report of the Whitney Committee in 1918 confirmed the findings of its preliminary report.

In the *New York Herald* in a news interview November 22, 1920, the following statement appears:

"Dr. Ernest S. Bishop, the well-known diagnostician, whose experience with alcoholics and drug addicts has made him an authority on the subject, says that there are more drug addicts today than ever before; and that there is more illicit drug traffic than ever before."

"However," says Dr. Bishop, "*this increase is not because of the enactment of the Eighteenth Amendment.* Prohibition has nothing whatever to do with it."

As Dr. Bishop is recognized as the best authority on the subjects today, this statement alone must be regarded as practically *ex cathedra* announcement.

I might go on and quote at great length from other authorities and reports to the same effect. It would, however, be redundant repetition of what is regarded among all qualified and informed persons as axiomatic fact.

There is no basis for the statement that the indulger in alcohol would turn to the administration of opiate, in the expectation of substitution effect or replacement of stimulation.

It is also doubtful if there has been any real alcohol prohibition in effect, so that the necessity for any such hypothetical substitution has been absent. It is said to be far easier and much less expensive to obtain alcoholic liquor than it is to obtain narcotic drugs.

It is not enough to deny a proposition without furnishing evidence as to some of the facts concerned in the history and machinery of actual causation in the drug situation which it must be admitted has come to exist.

In an editorial in the *Medical Economist* of June, 1918, concerning the newly enacted Whitney Law and Commission in New York State, I predicted:

"This law will prove a wise and efficient advance in the solution of the narcotic sit-

uation, if it is wisely and efficiently administered. If it is not so administered, there are the gravest possibilities of a repetition of the 'reign of terror' which followed upon and was the result of the ignorant and incompetent interpretation and administration of the first New York Narcotic Law—the original Boylan Law."

Concerning the fulfilment of my editorial prophecy, Judge Cornelius F. Collins, chairman of the Narcotic Committee of the Judges of New York State since 1914, stated in a speech before the National Police Conference and appearing in the *National Police Bulletin* of August 23, 1921:

"We established a State Commission. It started to make regulations. The Board of Health persuaded them to make regulations and they placed restrictions around the doctors that made them stop practicing. My theory was followed out again that as soon as the doctors were stopped practicing medicine in this connection and stopped treating the addicts, then came the underworld peddlers and all the underworld terrors that we feared."

This, Judge Collins points out, in a letter to the *Medical Record*, October, 1921—

"is not due to failure of the statute, but to the enforcement of promulgated rules and regulations which were in some instances in their effect tantamount to repeal of the law and contrary to its intents and purposes."

The same explanation with elaborating speeches is contained in my own Congressional House Resolution No. 258,¹ which was endorsed at their last annual convention by the American Medical Association and the other important national scientific bodies, and must, therefore, be regarded as the official expression of medical and scientific opinion upon this subject.

A most significant warning and prediction of the present situation was presented to the Legislature of New York State, and came from the judges of New York State in the form of a telegram of protest against what was known as the Cotillo Bill, which in 1920 attempted the re-enactment of the provision of the old Boylan Law, under which smuggling and peddling and spread of addiction had its first serious impetus.

The telegram of warning and protest I quote from as follows:

"The bill referred to would utterly destroy the constructive work of five years, including two years intensive study by Joint Legislative Committee.

"Forbidding doctors to prescribe would threaten public calamity.

"The underworld and illicit traffic would find a new and appalling impetus, and violations of the law both as to narcotics and crimes vastly increased."

This prediction and warning came from the Judges' Association of New York State in March, 1920.

It has been most obviously and calamitously fulfilled.

As I said before, its fulfilment is discussed at length in my Congressional Speeches and Resolutions above referred to and by endorsement of the scientific bodies now made practically the consensus of opinion of the scientific profession.

These above quoted and other expressions of warning and expositions of fulfilment are reinforced by recent declarations coming from the Assistant Attorney General of the United States, John W. H. Crim, from whom I quote his official utterances before the Committee on the Judiciary, January 23, 1923, and the Committee on Foreign Affairs, February 14, 1923; speaking of narcotics and addiction, he says in part:

¹See *Congressional Record*, January 12, 1922, and July 18, 1922.

"It is a problem for which we have no foundation in penology today."

"It is today very largely a pathologic matter."

"The law has been directed at preventing physicians from selling narcotics and by the same token has forced the addict into a criminal atmosphere to get them."

"All of which has stimulated the trade and occupation of the smuggler."

"The war is very much responsible for the stimulation of the narcotic traffic."

"Many of these boys were over there in the trenches. They received narcotics in their treatment. They came back here as addicts. Among those who had been discharged from the army there are a great many."

"I had a gentleman come in here yesterday and his brother is an addict. It started in an army hospital."

"This young man is searching around trying to find somebody who can tell him what to do, whether there is any hope or not."

"We are in the dark until the medical profession tells us what is to be done."

"I am absolutely at sea for the reason that fundamentally it is a pathologic matter, and until the medical profession and the scientists tell us what to do in handling these people we are not going to make much progress."

"I feel that the present law regulates and reaches the better class of physicians. If anything, it has caused the more competent physicians to take the position that they would not administer narcotics and has driven the addict ultimately into crime itself."

"That occurs too frequently under the present law" (or rather the present rules and regulations and interpretations of the law). "That addict is gradually driven to the underworld, where you have not only the crime of buying and selling narcotics, but every other sort of crime, and there he buys his drug. In a little while he has no legitimate source of income whereby he can procure the drug at the prices—inordinate prices he is required to pay in the underworld. Then he goes to stealing, robbing, burglary or some other means to get funds to get this drug, or he will buy a bottle of it and sell out a part of it so that

he may get his drug in that way and you drive that fellow right into prison."

"You ask me what to do. I tell you frankly, I do not know. *It is a problem that the lawyer cannot answer until he has more reliable information from the medical profession.*"

"I want more investigation by the scientists on the drug addict. Now, as to what can be done with them and what ought to be done with them."

"We have the depraved man and the degenerate, and it would be just as well to exterminate them, but if these people can be cured, if these people can be prevented from becoming criminals, if they are merely sick people—as a very large number of scientists believe—the way to treat a sick man is not by criminal law, and we take that addict, put him in prison, keep him there during his sentence, let him out, and too frequently he is back again in a short time; and oftentimes when he first went to his physician he was a man of high ideals and high character."

Assistant Attorney General Crim has tersely and accurately restated the contentions of the medical profession (except for a small group), as shown in many places and in my own speeches and resolutions, now endorsed by the medical men and organizations of this country.

In conclusion, Mr. Crim says:

"I do not want to be dogmatic. I do not want you to feel, Mr. Congressman, that I am certain. I think the data we have been working on, the literature we have been working on, are data that may be found later to be the wrong theory."

The concluding statement of Mr. Crim as to the error of the data upon which the law has been interpreted and administered for the past three or four years is the crux of the narcotic drug situation today.

For adopting false data and ignoring scientific literature and experience and record and facts, the administrators of the law in the past four years are not, however, to be entirely blamed.

They have been misled as has a large part of the general public by insistent promotion and propaganda and publicity which has advertised the sensational or the misleading generality deduced or manufactured by incompetent groups from non-representative cases.

They have been misled by meaningless words and phrases and slogans, coming from inexperienced and unqualified persons who have paid no attention, apparently, to the mass of reliable experience and literature and record easily available.

This has been gone into so fully in many places, including my own speeches and writing, that I shall not take up space for it here. I will merely say that *if there had been one-tenth as much publicity for facts as there has been for incidental spectacular morbid details and for catchy slogans and for false panaceas, there would be no drug problem today.*

In other words, nine-tenths of the available and practically all of the useful information has been suppressed and kept from administrative recognition for the past three or four years.

The solution of the narcotic drug problem today lies in the encouragement and dissemination and common sense application of all information and experience, just as the existence of the narcotic drug situation today lies in the suppression of nine-tenths of the available information and experience.

As Mr. Crim has said, the law "has been directed" towards the elimination of reliable medical and scientific work and progress and education in the subject of narcotic drugs and narcotic drug addiction.

At the close of the two years' New York Joint Legislative Committee investigations, its chairman, Senator George H. Whitney,

summed up the findings of the investigation as to addiction in the following words:

"The cause of which is ignorance, the results of which are misery, the remedy for which is education."

In the neglect of these findings of the only open and complete investigation ever made into this subject, and in the substitution therefore of what the Legislative Report of the Medical Society of the State of New York at its annual convention in 1921, designated as "formularizations" prepared "*ad hoc* by ten men in the medical profession and a couple of lawyers" with no qualifications except ignorance upon the subject under consideration, and as has been shown their appointment to various interlocking committees lies the answer to the suppression of information for which the Assistant Attorney General and all other honest inquirers for truth are now seeking.

In the place of consideration of and attention to the real problem of narcotics and addiction has come a few broadcasted and propagandized "formularizations" incompetent in origin, misleading in substance and presentation, and useless and calamitous in application.

Among other things the idea that narcotic (opiate) addicts in general are degenerate and criminal is a promoted fallacy of great viciousness.

Also such misleading or unfounded phrases as "ambulatory treatment," "hospitalization," "satisfaction of craving," and the handful of other phrases which have been cleverly used as propagandic slogans and false or misleading definitions, distracting from urgently needed real work, real education and real issues, must be in the light of available medical and sociologic facts, relegated to the history of a promoting and hysterical past.

We must eliminate the promoters of spurious or unworthy specific so-called and so-advertised "cures" and "panaceas," drive out the political and commercial exploiters and encourage the physician, medical workers and students to once more take up the study and treatment of narcotic addiction.

The most reliable estimates from many sources (contrary to some of the propagandized statistics from certain sources) place the criminal or degenerate type of addicts as from twenty to ten per cent. of the total so afflicted. This is about the same percentage of criminal or degenerate individuals as would be found in all other medical conditions.

In other words, the real practical problem of the narcotic drug situation—the problem which is absolutely neglected today—is the immediate humane and scientific medical care and, so far as possible, cure of from eighty to ninety per cent. of those afflicted with opiate addiction, people who are decent and respected in their communities.

Ignore this and drive out the available humane and scientific medical care and you create a condition which has been repeatedly shown as inevitable effect, in every survey, report or investigation of reliability and honesty and competency, and finally by the United States Assistant Attorney General himself.

You create and force patrons and customers for the spurious advertised "remedies" and "cures" and for the criminal vendors of the underworld, and you increase smuggling and peddling and the corruption of officials, by creating necessity which is immediately capitalized in immensely profitable illegitimate enterprise and exploitation of the neglected needs of suffering humanity.

This is the real basis for the present situation.

There are two fundamental issues, irrespective of all the quibbles and sensational publicity promotion of morbidness and other manifestations of these periodic outbreaks which always end in creating the drug situation—two fundamental issues to which sooner or later there has always been forced a return of consideration:

(1) How can we best take care of the narcotic addicts we have?

(2) How can we best prevent the making of more addicts?

The traffic whose commercial extension is making more addicts today was created by the closure or obstruction of legitimate medical channels of study and treatment and education and, as Mr. Crim has pointed out, by the driving away of the family doctor from the care of the addicted individual.

Wise and sane administration and interpretation of laws aided by truly educational publicity has at times succeeded in interrupting and checking this underworld traffic by which the non-therapeutic addiction patient is created.

A certain amount of unavoidable opiate addiction thru necessarily prolonged opiate medication is concerned by all reliable authorities and students to be inevitable.

The case of the returned soldier addicted during treatment in a hospital in France is an illustration of this, as are also some cases of cancer, operative conditions and prolonged medical emergencies in civil life and the ordinary practice of medicine.

Nobody but a fool, a promoter, an ignoramus, or a medical or political quack would make any statement to the contrary.

There are conditions and facts which sooner or later we have to meet, and one of them is that the continued administra-

tion of an opiate drug, under whatever conditions, invariably results in the formation of a physical condition which can be met or cured or cared for by neither rules and regulations, sensational publicity, exhortation nor any other of the repeatedly offered and promoted panaceas.

The sensational publicity and some of the unjustified restrictions, periodically given to, or based upon the morbid aspects of the ten to twenty per cent. of addicted individuals who are admittedly criminal or defective individuals, have served only to create hysteria and panic—to drive out medical and scientific progress and education and honest work and to advertise and renew and enlarge the business of the underworld exploiter and the corrupt official and the quack.

Cut out the profit for the underworld and criminal traffic and you make no new addicts thru what is today the most prolific machinery of their creation. Where there is no profit there is no market for the smuggler and peddler, and no incentive for them to extend their business.

Encourage honest attention by the family physician to the needs of the innocent afflicted, made so by unavoidable or necessary medication or by the ignorance or suppression of education which promoted sensationalism has caused and made to persist.

Thoroly and relentlessly investigate the facts concerning all "institutions" or so-called institutions, which are treating these patients, and make their treatment conform to the same standards of humanity and medical competency that are demanded and recognized in the treatment of any other disease.

The history of institutional treatment in a majority of cases has been shown by

every competent investigation to be incompetent and abortive of results.

Open up the avenues of reliable information and progress and education for the medical profession and stop their being controlled and terrorized by the incompetent or the dishonest.

If you do these things (as has been repeatedly shown) you take out of the clutches of the underworld and the ignoramus or exploiting official eighty to ninety per cent. of its possible patronage and all of its profit.

For its real profit does not come from the much advertised ten to twenty per cent. criminal type of individual addicted, but from the neglected honest and self-supporting persons addicted whose family physician has been forced to abandon them and they forced into channels of exploitation and extortion.

Let the police take care of the ten to twenty per cent. criminal or degenerate addicts. Let the medical profession, the family physician, the provenly competent hospitals and scientific institutions take care of the honest addicted persons on the same basis and in the same way as they would any class of honest afflicted.

Get the only profession that can solve medical problems and care for the sick back into work in its legitimate and proper sphere without danger of oppressive administrative interference and ignorant or instigated over-regulation.

If you do these things you at once eliminate the profit from illegitimate channels of charlatan exploitation and solve the problem of smuggling and peddling.

This was the consensus of study and experience and investigation at the end of 1918, and is unquestionably preponderance of reliable opinion today. The utter failure

and disastrous results of the administrative and other experiments of the last three or four years which have ignored it, have established its fundamental importance in the control and remedy of the drug situation and its problems beyond all honest question.

The ignoring of the real needs of the narcotic drug problem has created the narcotic drug situation.

The enactment of the Eighteenth Amendment or any legislation concerning alcohol had and have nothing whatever to do with it.

THE DISTRIBUTION AND THERAPEUTICS OF IODINE.¹

BY

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New York City.

The distribution of iodine has become a much mooted question within very recent times, and the interest aroused concerning it has prompted ambitions on the parts of leaders in medicine and institutions interested in the economics of food and its relation to public health to explain its variations in soils and water supply.

The Ohio State Agricultural Experiment Station, in the *Bulletin* issued June, 1916, entitled "The Iodine Content of Foods," contains a very extensive list of foods and the results of an analysis classified first, alphabetically, as to the kinds of food, second, as a group according to the general class or character of the food products, and third, a geographic arrangement. In the discussion of results, they point out that one

is impressed with the small proportion of our food products which contain iodine, and also with the minute quantities and haphazard nature of its distribution, they further suggest that the iodine is probably an incidental constituent of food.

"The iodine content of foods, ranging in order from those containing the most to those containing the least, is as follows: Irish moss, agar-agar, corn (stover), celery, lettuce, potatoes, wheat (winter), cucumbers, rhubarb, oats, onions, oat-plant, endive, beets (red), wheat (spring), rutabaga turnip, cowpeas, distillers' grains, corn, beans (brown), carrots.

Foods containing some iodine arranged in alphabetical order: Apples, apricot, barley, beans, beans (Navy), beets (sugar), blueberries, brewers' grains, butter (creamery), cabbage, cinnamon, codfish (shredded), corn (sweet), eggs (hen's), ginger, gluten flour, kohlrabi, liver (calf's), lobster, mutton chop, nucleic acid (yeast), oatmeal, orange, oysters, parsnip, pearl barley, peas (dried), peas (field, hay), peas (garden), pork (salt, fat), raspberry (red), rice (polish), roe, sardine, sorghum, soy beans, spinach, wheat (durum), wheat (bran), wheat (middlings).

Foods containing no iodine, arranged in alphabetical order, are: Almonds, apple (canned), apple (dried), apricot preserves, bacon, banana, beans (Florida velvet), beans (green, stringless), beans (lima), beans (stringed), beef (round), blackberry, brain (hogs'), Brazil nuts, buckwheat flour, cream cheese, chocolate, clams, cloves, cocoa, cocoanut, coffee, corn (dent), corn (dent immature), currants, dates, flaxseed, figs, halibut (smoked), ham (smoked), heart (beef), herring (boneless), kale, lard, lemon, lentils, mangel-wurzels, milk, molasses, nutmeg, olive oil, pickled olives, peach, peach (canned), peach (spiced), peanuts, pearl hominy, pear, pear (canned), peas, peas (garden), pecans, pepper (black), pepper (cayenne), pepper (mango), plum, pork steak, potatoes (sweet), prune, pumpkin, raisin, rye, salmon, salsify, salt, shrimp, squash, tapioca, tea leaves, tomato, tongue, tuna, turnip, walnuts (black), walnuts (English), wheat-flour, whitefish.

"This summary shows that in order of increasing abundance of iodine in the several groups, mentioning first the one in which iodine is most rarely found, these groups would rate in the following order: (1) Nuts, (2) spices, condiments and stimulants, (3) fruits, (4) cereals, (5) hays, silage and forage crops, (6) garden vegetables and root crops, (7) leguminous seeds, (8) animal products, and (9) milling and manufactory by-products." While they list "Manufactured foods, and milling and manufactory by-products" as the highest in iodine, there is a statement that the offal portions of grain are richer in iodine than the more starchy parts, which fact emphasizes the importance of using the whole grain to obtain the mineral constituents. Marine plants, such as agar-agar

¹This is the second section of Dr. Quimby's exceptionally interesting and valuable study of iodine.

and Irish moss were richer in iodine than any other plants examined, but "the more important sources of iodine in the human dietary, then, are the garden vegetables, tho some is also found in the cereal foods and in several foods of animal origin, mostly of the sorts less commonly used."

In the analysis that concludes the experiments we find the following statement:

"The iodine content of foods grown in these goitrous regions appears not to be lower than in foods grown elsewhere, nor is a high iodine content characteristic of foods grown in goitrous regions." Furthermore, "the results of this investigation direct us toward a study of factors other than the diet which affect the amount and condition of the iodine present in the thyroid, as promising results of greatest significance in relation to the cause of goiter." These conclusions tend to modify a somewhat general conception that food plays a great part in supplying the iodine the system demands; however, "it is possible that the iodine content of the drinking water would contribute valuable evidence to this consideration."

Obviously, food and water supply govern our iodine intake, but foods received in large cities are generally from widely varying sources and, therefore, are varied in their iodine content; water supply is more stable, being received from selected local sources, consequently its influence upon the iodine metabolism of the inhabitants is more uniform.

A number of writers have referred to the seasonal variation of the iodine content in the thyroid gland, increasing during the spring and summer, when the stock are on pasture. Lorat-Jacob says, "One also finds iodine in rain water." France and England and similar countries lying between large bodies of sea water no doubt receive a greater proportion of sea mists at all times than such enormous inland territories as the middle of large continents.

Could we be daring enough to give an additional reason other than the numerous ones suggested as to why mankind had his life-cycle reduced to the prescribed three-score and ten? Permit us to propose that those who lived to the great age of Methuselah and others perhaps lived in an en-

vironment or a land the soil of which contained an uncommonly high proportion of iodine. Perhaps this may even have been the famed Atlantis, recently thought to be beneath the Pacific Ocean, and perhaps this land contains great salt deposits rich in iodine, used by the men of that day, the dissolving of which could account for some of the recent conclusions submitted in an article written by McClendon and Williams in the *Journal of the American Medical Association* for March 3, 1923. (The above paragraph is written with apologies to McClendon and Williams.)

It is undoubtedly true that disintegration of rocks and clays provides soluble elements for vegetable life, altho the submerging of continents as suggested by McClendon and Williams may be a contributing factor. Again quoting Heinrich Ries:

"The pre-Cambrian crystallines yield both white and colored residual clays, usually the result of weathering, tho more rarely, of solfataric action. In the Paleozoic rocks deposits of shale and sometimes of clay are found in many localities, and since they are usually marine sediments the beds are often of great extent and thickness."

Lossedat states: "Iodine has become one of the most important medications in actual therapeutics as an antiseptic, as a modifier of circulation and nutrition, and also as a stimulant to the natural defenses of the organism. Furthermore, iodine opposes the advancing march of sclerosis."

Bourcet writes of iodine: "The circulation will become more active, the skin warmer, the appetite augmented, the digestive functions stimulated," while Sajous says: "It is evident that it is thru the body's antitoxic and bacterial functions that the iodides produce their curative effects."

We can hardly credit the function of iodine with being solely that of regulating blood distribution, but clinical evidence points to it being a tremendous factor in

controlling this phenomena. The circulatory responses to the introduction of a physiologic supply of iodine is the most remarkable trait that this agent exhibits and, as I have previously indicated, it may be accepted as the most vital factor in this respect, in the maintenance of functional activities.

The apparent lack of iodine in the organism may be due to two causes: one is lack of absorption thru the alimentary canal, the other is the need for a higher percentage of iodine within the blood stream.

The dysfunction of the alimentary canal which permits interference with the production of normal digestive processes arises primarily from inherited abnormalities, and secondarily from the invasion of bacteria, a process which is continuous from the birth of a child. Inherited traits undoubtedly explain why children under similar conditions react differently to definite diet, the same principle applies thruout the adult life. During my work on the roentgenologic examination of the intestinal tract, which has covered every stage of existence from the new-born to old age, I have found mechanical faults and deviations from the normal, all of which contribute to interference with gastrointestinal function.

Organisms which produce fermentation and putrefaction are more readily permitted to colonize and maintain a permanent residence within the section of intestine which cannot evacuate properly. Food rich in the essential elements for the human economy enters the intestinal tract and is disintegrated by the gastric juices and bacterial processes. Digestion is a normal process and provides us with absorbable substances having special properties; putrefaction and fermentation disintegrate food into molecules of lower degree of combination and unfavorable for the purposes of nutrition, as

such they tend to be eliminated in the manner in which nature intends a foreign substance to be disposed of. While we recognize that iodine is apparently absorbed in any soluble form, it is very evident that the amount absorbed is proportionate to its freedom from chemical entanglements unfavorable to the human economy.

Infectious processes, toxemias or a deficiency in the essential chemicals, lower the capacity of the organs to functionate; this results in such structures as the thyroid reducing the proportion of active cells. This being so, we can conceive of the need of a greater proportion of iodine within the blood stream which supplies the remaining cells.

Decrease in the proportion of iodine essential to the organism is manifested by reduction of all the body functions, such as capillary circulation, changes in the skin, disturbed functions in the internal secretory glands, processes of elimination, sterility, and premature senility whether manifested by premature gray hair or mental disturbances.

To the patient who is deficient in iodine in physiologic proportions, a number of things will be manifested following an increase in his iodine supply. Among them we have the sense of well-being and comfort with accompanying improvement in temperament and outlook upon life, a sense of warmth and of increase in circulation, with ambition to carry on work. Patients will frequently state that the bowel action is freer and of better color, reducing the need for drastic cathartics. There is also an increase in the quantity of urine, at least temporarily, dependent upon the conditions that prevailed previous to the administration, and the appetite is improved. The capacity of the mind to carry on its activity

is noticeable, and a patient subject to cold extremities and cold and dry or clammy skin will notice the improvement within as early a space of time as twenty-four hours after the administration of a small portion of iodine. One remarkable characteristic in the insomnia frequently seen in disturbed blood-pressure is quiet, easy sleep, with sense of being well rested the morning after the administration of iodine. The inspection of the patient following the administration frequently shows changes in blood-pressure, increase in the activity of the skin circulation and improved color. Also, the skin becomes clearer and the eyes brighter, while prolonged administration of iodine modifies the arteries if sclerosis has been established.

It is essential that any modification of arteriosclerosis shall be managed with conservatism and careful watching of the blood-pressure and elimination; no attempts should be made to force rapid changes in the arteries, therefore the advantage of extending such treatment over several years. The improvement of glandular activity should also be undertaken with the expectation of consuming time proportionate to the amount of damage that has been done thru dysfunction or inaction of the glands, caused by toxemias or chemical deficiencies.

Great credit has been given iodine in its effect on the lymphatic system, so that it has come to be thought vital to the activities of the lymphatics. There is evidence that it is probably in a greater proportion in the lymphatics than some other tissues, but this is incidental to its capacity to stimulate the general metabolism in the fight against toxic processes, the vascular stimulation relieving the lymphatic of a great portion of this burden, and as a consequence permitting drainage and reduction in size

of the lymphatic glands following iodine medication.

It is an accepted principle in medicine that iodine is essential to the proper action of the thyroid gland; it is also recognized that the endocrine glands are dependent one upon the other, interchanging, to a limited degree, their functions, or if one gland fails to carry on its duties, a vicious circle is established that disturbs the chemistry of other glands. The thyroid gland has apparently assumed a special function with regard to iodine, converting this substance into a form which permits it to be carried thruout the organism, and to take part in the activities of any living cell having a complex molecule.

Iodine, by regulating vasomotor reactions, stimulates the blood flow, most manifest in the capillaries; this function alone permits it to have a vast influence on general metabolism whether anabolic or catabolic. To iodine has been attributed, by a number of writers, selective oxidizing function, especially pertaining to the disposal of fat. If we give proper consideration to the process of oxidation, whether the consumption of the coal in a furnace or the utilization of food in the human economy, we must recognize that this oxidizing process is for the production of driving forces, a portion of which is manifested in heat, and the remainder may be applied to mechanical forces or chemical changes. The consumption of hydrocarbons or carbohydrates in the body, while important, is not a complete explanation of the metabolism pertaining to the highly organized living cell. The assimilation of fats and sugars will not explain the antitoxic qualities of such an agent as iodine; for this we must turn to living cellular structures having distinctive functions, and that iodine

stimulates these functions or allows them to be carried on to the maximum degree of efficiency must be recognized.

Clinically, iodine increases the resistance of the organism to disease. This is an accepted fact, and proven by many clinicians and experimenters; we cannot, therefore, look upon fat oxidation as sufficient foundation for the virtues of iodine in combating infectious processes. In referring to physiologic iodine we can regard it as iodine that is essential to the metabolism, whether this be the normal needs of the normal human being free of any infection, whether focal or constitutional, whether chronic or acute, the proportion of iodine essential is that which maintains to the highest degree of activity the metabolism essential to the maximum well-being of the patient.

Infectious processes increase the need for iodine because metabolism is increased in the organism to fight the toxins and the end-products of bacteria. That this virtue has been recognized by some can only be attributed to its ability to increase the activity of the living cell by permitting this function. Iodine cannot be regarded as directly an anti-bacterial or antiseptic agent in the blood stream—the quantity in the body juices is not sufficient for anti-bacterial powers. The fact that bacteria will exist in sea water is proof that minute quantities of iodine are unavailing as an antiseptic. Iodine prevents production of sclerosis, whether it be in the form of toxic processes causing round cell infiltration, etc., or in advanced processes which are manifested in arteriosclerosis, senility, etc. If cases are given iodine for long periods of four or five years, and occasional observation made, it will be found that ageing is retarded. Whether this be exhibited as a manifestation of general activity or im-

provement in the mind, the writer has seen this in several cases advanced in years. These reconstructive changes are essentially slow, as the tenant of the human body must remain living in it. During these changes we can but expect that no effort should be made to force rapid resolution in those advanced in years.

I have seen gray hairs practically disappear during the administration of iodine, and I have also seen them return when iodine was discontinued over a number of months and disappear again when iodine was readministered. I am also acquainted with long-standing cases of sterility in the male which have been promptly relieved by the administration of physiologic quantities of iodine.

The X-ray operator is subject to rapid ageing because of the destructive nature of the X-rays upon the living cell when used over long periods of time; iodine is a very vital agent in the control of this process, permitting the X-ray operator to continue his work with a greater degree of safety, and there is reason to believe, preventing the sterility that may develop during the life of the roentgenologist.¹

Any manner of living calling for increased stress and strain with the consequent increase in metabolism should be met with an increase in the deficient elements of the human economy. Iodine can be regarded as the deficient element in practically all the inhabitants of the earth excepting those living the simplest form of existence. The modern city dweller represents the highest type of civilization, and is the furthest from nature and her reme-

¹Quimby, A. J. "The Roentgenologist's Mechanical and Physiological Protection from the X-Ray," in *American Journal of Electrotherapeutics and Radiology*, December, 1922.

dies, the most important of which are regular and proper rest. The city dweller is constantly in need of more iodine than he receives in his water or diet; his intestinal tract is not capable of distributing the amount ordinarily available, his manner of life calls for the utilization of a greater proportion of iodine. My experience with a large number of cases and over a number of years has convinced me that comfort and well-being of the city dweller can be materially improved in this respect.

The administration of iodine to meet the physiologic needs must be determined in an empirical way, subject to the knowledge possessed by the physician managing the case until such a time as an accurate conception of its place in metabolism has been found.

In acute cases the dosage is comparatively large and should be governed by the pulse and temperature. It is important that the administration in the acute infectious processes should be restricted to such formulas as allow absorption without irritation to the mucosa. Free iodine is essential for maximum benefit. It is unfortunate that iodine is not soluble in water, but necessitates the presence of salts, the most frequently used being potassium iodide to render iodine soluble. It is soluble in alcohol and glycerine, but the dilution essential prevents the use of large quantities of these solvents. The ideal method of administration is to give a soluble iodine in a large volume of water with the least quantity of salts of iodine that is permissible. Ammonium iodide is probably the most efficient salt of iodine available for addition to iodine preparations, as an aid in solution. The following formula has been found very successful by myself and associates:

R

¹ Iodine crystals	gr. xxx
Ammonium iodide	gr. xx
Alcohol	oz. ss
Glycerine ad. oz. q. s.	oz. i

M. F. T.: Glass stopper, pipette dropper bottle
S. one to four drops in a glass of water.

I have found this modified tincture to have a high efficiency in the administration of physiologic iodine for the combating of disease processes. The official tincture of iodine is efficient to a less degree because of the greater tendency for the contained potassium iodide to irritate the mucosa and inhibit absorption.

Iodine is valuable in the chronic toxemias that accompany focal infections, combating their evil influences. In doing this, relatively small doses can be given, but should be carried on continuously as long as the focus of infection exists.

Again, in this work blood-pressure and excretory functions should be closely watched. In the chronic toxemias which accompany intestinal anomalies which are frequently beyond the reach of surgical remedy the long-continued administration of small quantities of iodine is very useful—especially in the varied life of the business man or those living with extreme intensity. Iodine is frequently a short route to relief from the effects of the exceptional load of physical strain. In the management of such cases the dosage should be reduced to one or two drops a day, or five or ten drops every three to five days. The normal needs approximate about one ounce of metallic iodine each year added to the resources derived from food and water.

40 East 41st Street.

¹Quimby, A. J. "Physiological Iodine," *N. Y. Med. Jour.*, December '20, 1922.

WILHELM KONRAD ROENTGEN— HIS DISCOVERY AND ITS INFLU- ENCE ON CLINICAL MEDICINE.

BY

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The Discovery.—It was late in the fall of 1893. The ancient town of Würzburg is basking in the autumn sunlight in the vine-clad valley of the Main. In the broad and tree-lined Pleicher-Ring is the Institute of Physics. Within its walls in a room littered with scientific apparatus a man stands deep in thought before a glass bulb glowing with colored light. He is of middle age, tall, heavily bearded, with a face almost spiritual in its aspect. His brow is broad, the eye, tho deeply set, glows with kindness; the lips are thin, the mouth is firm. It is the face of an ascetic and a thinker.

This little glass tube he studies so intently as it glows and flickers with its iridescent hues—what an amount of thought, of painstaking, laborious investigation it represents! Plücker, Gassiot, Geissler, Hittorf, Varley, Crookes and Lenard, and before them all, Faraday, how persistently the human spirit strives to find the meaning of nature's mysteries! How crude the beginning, how halting the progress, how hidden the goal. How slowly the foundations are laid, often without definite plan; the walls rising haphazard, isolated, disconnected, until the master mind sets the cupola and lo! the structure glows with a beauty and significance undreamed of.

In this vacuum tube, energized by the current of an induction coil, lie many of the mysteries and marvels, not only of

modern electricity, but of matter itself—its ultimate constitution—the master problem of the universe. Geissler had passed the induced current thru a tube of low vacuum and had produced the exquisite color effects. Hittorf had discovered the cathode ray therein. Crookes noted the change in the phenomena, as the vacuum was increased to about one-millionth of an atmosphere. On Hertz's suggestion Lenard brought the cathode stream out of the tube and studied it exhaustively.

All this was in the mind of Wilhelm Konrad Roentgen, then professor of physics at the University of Würzburg, as he watched the flickering bulb. He noted the beautiful green fluorescence of the glass of the tube, just as Plücker had done thirty-five years ago, and thought of Crookes' designation of "radiant matter" as that influence which apparently radiated from the negative pole.

Absorbed in thought, he did not notice how quickly the hours flew. Called from the room he laid the still glowing bulb on a book he had been reading that morning, in which lay a large, flat, antique key, which it was his wont to use as a bookmark. It happened that underneath this book lay a photographic plate holder which he had prepared for an afternoon's outing. Returning later to the laboratory he gathered up several plate holders, among which was the fateful one under the book, and spent the afternoon outdoors, seeking recreation and amusement in the practice of his hobby, photography. He made several exposures. On developing the plates a shadow of the antique key, his bookmark, appeared on one of them. He wondered how this could have happened. He showed the plate to his students and asked them for their ideas, but none of the explanations offered satis-



WILHELM KONRAD ROENTGEN

fied him. How came the image of the key upon the plate? The fogging of photographic plates in the proximity of energized vacuum tubes had been noted before, but to Roentgen's scientific mind this phenomenon demanded a satisfactory explanation and he proceeded to analyze it.

Hertz had said that something passed thru the walls of the tube. But these were cathode radiations from the Lenard tube, which Lenard had so thoroly studied. It was known that these cathode rays, when brought thru the aluminum window of a vacuum tube, moved in straight lines, discharged electrified bodies, penetrated thin substances, and affected photographic plates. But this was no Lenard tube with an aluminum window, but a relatively highly exhausted Crookes tube, and neither cathode rays nor ultraviolet light could pass thru the glass of the tube and accomplish this. Roentgen decided, therefore, to search for the mysterious agent which had so silently recorded its presence. He restaged the drama, placing the glowing bulb, the tube, the key and plate exactly as before and energized the tube for the same time as on the preceding day. He developed the plate and lo! the shadow picture of the key was on the plate. Invisible light? Was some influence emanating from the glowing bulb that had the power of penetrating solid objects and affecting the photographic plate?

Let him who will speak in admiration of the poetic imagination which soars on spiritual wings in the world of fantasy, singing words that soothe the ear and weaving fancies that stir the emotions. The imagination of the scientist far transcends that of the poet not only in the scope of its fancy, but surely in concrete accomplishment. The imagination of La Place reached

out into the infinite heavens and made possible the measurement of the courses of the eternal stars, the weighing of them as in a balance, their analysis as in a test tube. In the microcosm the inspired imagination of a Pasteur caused the isolation of a host of organisms, whose destructive and constructive functions are so greatly the concern of medicine.

The imagination of Harvey lifted his eyes from the rutted paths over which legions of physicians since the time of Galen had traveled, to a newer vista where lay the truth of the physiologic problem of the circulation of blood. So, too, the scientific imagination of Roentgen dared to dream of what was almost scientific heresy, invisible light.

Noting the green fluorescence of the glass of the Crookes tube, he conceived that other substances might be similarly affected. He, therefore, surrounded the tube with a light proof envelope and, sure enough, a platinumobarium cyanide screen, even at a distance of nine feet, fluoresced brilliantly green in the darkened room. Eureka! He had it—a ray visible to the eye which traversed solid substance. He placed his hand on a covered photographic plate, energized the Crookes tube above it, and obtained a photograph of the shadows of the bones.

He at once saw before him the problem in all its possibilities. To study the invisible energy, to determine its nature, its origin, its characteristics—this was the work to be done. He carried on his researches in all phases of the problem and when convinced at last that he had discovered a new form of radiation, reported his results briefly on two occasions before the Würzburg Physicomical Society, December 28, 1895, and March 9, 1896, in a paper en-

titled "A New Form of Radiation." In 1897, before the Royal Prussian Academy of Science, in Berlin, he made a third communication, "On Further Observations of the Characteristics of the X-rays."

Let the captious critic point out that the placing of the glowing bulb upon a book containing a metal key and under which lay a plate holder, was a fortuitous combination of circumstances, a master stroke of the blind madonna of pagan Chance, who will doubt, knowing the thoroness of his methods, that sooner or later Roentgen would have made this discovery as a logical step in his researches.

His Life.—Roentgen was born in Lennep, in Eastern Prussia, March 27, 1845. It was planned that he should follow the agricultural occupation of his father, and his scientific education was, therefore, begun at the engineering school at Apeldoorn in Holland. He entered the Polytechnic School at Zürich several years later. Clau-sius was at this time teaching physics in this university, and it cannot be doubted that the young student listened with rapt attention to this great teacher, who developed the principles of the dissipation of energy and first advanced the mechanical theory of heat production.

Roentgen graduated from the university with the degree of Doctor of Philosophy. As a student he manifested an extraordinary aptitude for work requiring exactness in detail, and his industry and ability won him immediately after graduation an assistantship to Kundt, whose favorite pupil he was and with whom he was associated for many years. Roentgen has ever held him in highest veneration as his teacher and guide. To him he owes the exactness of his methods, his accuracy of thought and his thoroness in investigation. When Kundt

was called to Würzburg in 1870, Roentgen went with him and, in 1872, followed him to Strassburg, where he became a private lecturer in physics. In 1875, at the age of thirty years, Roentgen was appointed professor of mathematics and physics in the agricultural academy at Hohenheim, but left the following year, at Kundt's request, to return to Strassburg, where he assumed the position of the associate professor, teaching theoretical physics.

In 1879, however, at the age of thirty-four years, he was called to Giessen as full professor and director of the Institute of Physics. Here he remained for nine years, until appointed director of the Physical Institute in the great school of Würzburg, the second most important university of Bavaria.

It was here that the discovery of the X-ray was made. In 1900, after twelve happy, active and useful years of service, and at the special insistence of the government, he accepted the position of director of the Royal Academy of Technical Physics of the University of Munich, which position he occupies at the present time. The presidency of the Royal Physical Institute of Berlin was offered to him, but declined. Honors and titles from all corners of the civilized world were bestowed upon Roentgen. Immediately upon announcement of the discovery the Emperor invited him to demonstrate the X-rays at the Palace of Potsdam, where he was awarded the Crown Order of the Second Class. The title of Excellence was given him by the German Government and his statue was erected on the Potsdam bridge in Berlin. In 1900 the Columbia University awarded him the Barnard medal. In 1901 he obtained the Nobel prize for physics, the first of the awards made. The rays he discovered have, by gen-

eral consent, been named after him. The honors and acclamations of the world in no way affected the modest, generous and lovable character of the man. Nor can it be said of him that he ever derived any material gain from his important discovery. He gave it to mankind freely and wholly. On February 10, 1923, he died after a brief illness, in poverty at the home of a friend.

His Work.—Before 1895 his scientific work related to various questions in experimental physics; the examination of the specific heat of gases, the study of isothermal crystals, solar calorimetry, dust figures, aneroid barometry, and the absorption of heart by vapor. After that his efforts were mostly devoted to electricity and the phenomena of exhaustive tubes.

In the consideration of Roentgen's scientific labors one characteristic that stands out above all others is the self-restraint shown in his intellectual activities and his reverence for temperate and accurate deductions. His was the mind of a mathematician and his schooling was one in thoroughness, exactness and precision. Indeed, as a keen, inductive thinker he had no peer in the modern scientific world. Nowhere in any of his productions is there a hasty conclusion based on insufficient premises, nowhere any unfounded generalization. It is always the careful, painstaking work of an investigator, who constantly denies himself the joys of enthusiasm, persistently represses his emotionalism and the tendency of glorification in his achievement. The constant self-questioning, the constant searching analysis of his own beliefs and observations, indicates a mental asceticism which characterizes the highest type of scientific worker. He permits the facts to speak for him. His experiments, therefore, have an elemental firmness, strength and

finality. It is the quality and not the quantity that renders his work of such surpassing value.

We are too near the age to obtain the proper perspective of the personalities which will dignify it, but from the distance of centuries Wilhelm Konrad Roentgen will be seen as one of the towering figures of our time.

The Application of Roentgen's Discovery.—Nature has a sort of ironical contempt for man's delving. When man begins to believe that everything has been done, the problem settled and the last word said, she suddenly reveals herself in another aspect to show that there has as yet been little or nothing done, and points the way for him to begin anew.

According to Kaye, it was not infrequently maintained twenty-five years ago that the science of physics had put its house in complete order and that any future advances could only be along the line of precision measurements. Such pessimism was confounded by a sequence of discoveries since 1895, unparalleled in their fundamental nature and promise. In fact, no discovery in modern times has had such a far-reaching effect on chemical and physical science as that of the X-ray.

In the two short notes which Roentgen read to the Würzburg Physical Medical Society in December, 1895, and March, 1896, all the important characteristics of the new rays, their penetrability, the influence on the photographic plate, their ability to cause fluorescence, their non-refractability and the secondary ray production, the ionization power, the hardening of the rays by absorption, etc., were thoroly covered.

In spite of the enormous amount of work done after his discovery, it was not found necessary to retract a single statement re-

ported in his first communication for seventeen years. In fact, aside from Zeeman's demonstration that the electron is the origin of all visible radiations, and that all phenomena of light are due to the motions of these minute particles within the atom itself, nothing important was added to his contributions until Laue suggested that because of their probable short wave length no artificial diffraction grating would serve as a measure of the X-rays, but that the microscopic cleavage planes of the crystals might do. For the wave length of X-rays is 10,000 times smaller than that of sodium light, which is diffracted but 24 degrees by a grating which already has 7,000 lines to the centimeter, ruled on glass, it was obviously impossible to make this finer, for it begins to approach infinitesimal divisions. The spacings between molecules Laue thought would be about right for X-ray refraction. Friedrich and Knipping working on Laue's happy thought applied themselves to the task and found it to be accurate. Tho the problem was not so simple because of the three planes of the crystal, still a regular pattern of the diffracted beam is obtained and the pattern is always the same for the same crystal. Thus was opened a new field for research as limitless as any in science, for not only were the X-rays thus refracted and reflected, their wave lengths estimated and the very architecture of the crystal determined, but the arrangement of the very atoms which constitute matter, their internal structures and actual relation and the distance between atoms was revealed to the physicist. Thru the crystal he loved with as passionate a scientific ardor as Haeckel loved his fauna, not only was the nature of the rays he discovered determined, but a great step forward was made to the determination of the ultimate constitution of all

matter.

The discovery created a furor in both lay and scientific circles. The *New York Times* of Thursday, January 16, 1896, stated:

"Men of science in this city are awaiting with the utmost impatience the arrival of European technical journals, which give them the full particulars of Professor Roentgen's great discovery of a method whereby it is possible to look thru opaque bodies hitherto regarded as wholly impenetrable by light rays of any kind."

"Prof. Roentgen of Würzburg University has recently discovered a light which, for purposes of photography, will penetrate wood, paper, flesh and nearly all other organic substances. Thus the bones of the human frame can be photographed in relief without the flesh which covers them, or metals inclosed in a box covered with woolen cloth can be photographed as if the cloth and the wood did not exist. In one sense, it is a misnomer to call the process photography, as now understood, because no lens is employed to project the image. It also seems, from the brief accounts of the process, which has already been sent by cable, that the new images of concealed bodies, resemble rather the old-fashioned daguerreotypes than the modern finished photographs, inasmuch as they appear only very thin."

"Briefly, the new images are obtained by the energy given out in a Crookes vacuum tube. The object to be photographed is placed behind the tube, and a dry plate is placed behind the object. If the object be, say, a hand, the image on the dry plate will be the bones in it, without any flesh covering it, whatever."

"Prof. Roentgen has already used this process to detect the exact location of bullets in gunshot wounds, and one of the first practical uses is expected to be a transformation of modern surgery by enabling the surgeon to detect the presence of foreign bodies of whatever kind in any part of the human body."

It was Roentgen himself who really indicated the possibilities of a new diagnostic method in medicine and demonstrated that inner structures of the body may be visualized by the use of the fluoroscopic screen

and the photographic plate. But it is doubtful, however, if he realized the extent of its application, tho he stated in closing the discussion on his paper before the Physical Medical Society at Würzburg, where he made a plate of the hand of the president, Professor Kölliker, that for the examination of parts denser than the hand or foot, more powerful rays must be generated by differently constructed tubes. And what technical progress we have made is summed up in the fact that twenty-five years ago an exposure of one-half an hour was needed to delineate the bones of the hand, while today exposures of the chest may be made in 1/200 of a second at a distance of eight feet. Of its biologic effects on life processes, on cell destruction and growth he did not dream.

Thus the first picture of the bones of the living human hand told the astonished world that the dream of the ages had been fulfilled, that the human eye could see into the tissues, and everywhere, men of science applied themselves with feverish activity to the technical problems the discovery presented while medical men turned their energies and efforts in the direction of visualizing the various body structures and determining structural changes. Naturally the uses to which this method was first applied were in the detection of metallic foreign bodies, the determination of fractures and dislocations.

It was not long, however, before the diseases of the thorax were systematically studied (Bouchard, Paris, 1896). The thorax lends itself easily because of the marked contrast in the densities of its structures to the detection of the pathologic variations. To be able to look into the living chest, to see the ceaseless movement of the shadows of the heart and of the mediastinal structures, to watch the piston-

like heavings of the diaphragm—what a consummation!

By the older clinical methods the clinician sought to determine the air content of the lung by palpation and percussion, but by the X-ray he is now able to obtain a graphic record of tissue density in terms of color in the radiographic and fluoroscopic image.

Two thousand years ago Hippocrates taught that the splashing sound obtained by shaking the chest in disease was due to a partial filling of the chest with fluid. Seventy-two years before Roentgen's discovery Laënnec showed the true significance of the sign and but one year after Roentgen's discovery our own Williams of Boston actually saw the movements of the waves of the fluid of a hydropneumothorax after forcible succession, noted the rise and fall due to respiratory movements, the indulations synchronous with the systole and diastole of the heart and the agitation of its surface when the chest is percussed.

It is but necessary to enumerate some of the varied pulmonic and cardiac conditions which literally and figuratively are illuminated by the Roentgen-ray. Its utilization is invaluable in such conditions as the determination of small quantities of fluid, the localization of abscesses, interlobar or interstitial processes, the demonstration of diaphragmatic hernias, the differentiation of mediastinal tumors from aortic enlargements, of pericardial effusion from cardiac enlargements, the measurement of heart diameters, the control of pneumothorax treatment, the very early diagnosis of tuberculosis, etc.

Simultaneously with its use in the study of thoracic conditions came its application in the diagnosis of urinary calculi, giving accuracy and definiteness to the diagnosis of disease of the urinary tract.

MacIntyre of Glasgow in the *Lancet* of July 11, 1896, reported the first case of calculus diagnosed by the X-ray and found at operation. But already in August, 1898, an American, the much lamented Lenard, stated that in his hands the method assured negative as well as positive diagnosis in calculus disease, while today not only is the shape, size and position of the kidney determined and the presence of calculi, but the determination of the morphology of the pelvis, the course of the ureters, etc., the configuration of the bladder are matters of routine.

In the early stages of the development of roentgenology its contribution to the problems of physiology was not very great. When, however, by Rieder's suggestion of the use of opaque substances in the gastrointestinal tract it became possible to visualize the stomach and intestine, a flood of light was thrown into a hitherto dark field in physiology and diagnosis and with the introduction of this method the gastrointestinal tract became a field for entirely new researches.

For now a living anatomy was to be studied in contradistinction to the dead-house anatomy, and the shape, contour, position of the living stomach and intestine was revealed for the first time. And not only in its morphologic aspect, but from a physiologic viewpoint, functional studies of the living organs corrected our previous knowledge as a result of direct biologic observations. The data thus obtained, taken in conjunction with the work of Pavloff permitted the chapter on the physiology of digestion, particularly as showing the interrelationship of chemical and mechanical function to be rewritten. Among the physiologic facts gleaned the following may be mentioned: The relationship of habitus to visceral form and

function; the importance of visceral tonus; the relationship in function between the gastric peristalsis and the pyloric sphincter; the rôle of the antrum, the importance of the pylorus in correlating gastric and intestinal secretory processes; the rate of gastric discharge of different food; the segmentation and pendulum and peristaltic movements of the small intestines; complex direct and antiperistalsis of the colon, etc.

And when we come to the consideration of the help and the stimulus it has given us to the study of disease, who will not agree that by the magic power of this Aladdin's lamp the cave of pathologic treasures has been revealed, before operation and before death. While the last word in Roentgen diagnosis in disease of the gastrointestinal tract has not as yet been said, there have, however, been sufficient facts established to make this method indispensable to the clinician. It has simplified the difficult diagnosis of esophageal diverticula, of strictures and of the differentiation of intra- from extra-esophageal disease. In the stomach the recognition of ulcer with or without hour-glass contractions, of the niche or diverticulum formation due to the penetrating and perforating ulcer has become a routine procedure, while we are undoubtedly traveling hopeful in the road which leads to a far earlier recognition of cancer than ever before. The classification of the great group of subjective symptoms referable to the right hypochondriac region has undoubtedly been simplified by the aid the Roentgen examination has given to the diagnosis of duodenal ulcer, while it has assisted in the establishment of definite indications for surgical explorations in cases of periduodenitic adhesions. A great advance has been made thru the Roentgen examination in the recognition of diseases

in the ileocecal region, in the study of the effects of pericecal adhesions and ileal kinks upon the motility of the small intestine and cecum in the demonstration of the frequency of ileal or colonic stasis, in the localization of tumors of the colon or adhesions between various colonic loops and between colon and gall-bladder, in the early differentiation between carcinoma and diverticulitis, in the recognition of sigmoidal tumors. By rapidly increasing technical skill the diagnosis of gall-stones and enlargements of the gall-bladder is becoming a matter of routine. By the use of air injection into the ventricles (ventriculography) the diagnosis of brain tumors has been simplified, while thru the injection of oxygen or carbon dioxide into the peritoneal cavity the solid organs have been outlined with startling clearness and the relationship of obscure tumors has been disclosed, the patency of the Fallopian tubes determined, and the morphology of the pelvic viscera defined. And so one might go on to consider every field of surgical and medical and dental diagnosis.

Looking back over the progress of the past decades it is apparent that never perhaps has a method of examination been introduced into clinical medicine which so quickly and definitely established its value as has the Roentgen method.

Its great contribution to clinical medicine has been not only that it permits the uncovering of conditions with difficulty or not at all diagnosable by other means, but also because by acting as a check and a control it has sharpened the clinical sense and improved diagnostic ability by giving greater accuracy to the older clinical methods and establishing them on a firmer basis than ever.

The use of the X-ray as a therapeutic agent began with Freund's application

(1896) of the radiation to the treatment of skin diseases and now a vast literature, experimental, biologic and clinical, has accumulated and offers an overwhelming, convincing mass of evidence to indicate the great value of the X-ray in diseases of the skin, in diseases of the ductless glands, the female generative organs (metropathies, fibroids) and in malignancies which of late have been attacked with marked improved therapeutic results by a radiation of great penetrative power.

The realization of the rôle it now plays in medicine can be well appreciated by observing the marked change which has taken place in the attitude of most diagnosticians towards the fluoroscopic, radiographic and radiotherapeutic methods. Several years ago the attitude was one not only of lack of interest, but even of scorn and derision. Today it is conceded that no abdominal and thoracic diagnosis is complete unless based, in part at least, upon radiologic findings, and there are few hospitals in the world in which there does not exist a permanent memorial to Roentgen in the form of an X-ray Laboratory.

Who, therefore, will deny the discovery of Roentgen its place among the most valued contributions to medicine? As Kast says, "Like Pasteur and Koch in the domain of bacteriology, like Laënnec and Corvisari in the domain of percussion and auscultation, like the discovery of the microscope, Roentgen's discovery has broadened the paths of knowledge, has increased understanding and raised efficiency of practical medicine." And in paying a tribute to the memory of Roentgen, the physician but expresses a just debt of gratitude to him for having illuminated the paths by which clinical medicine has attained higher standards.

EPISTAXIS—DIAGNOSIS—TREATMENT.¹

BY

WILLIAM SPIELBERG, M. D.,

New York.

Epistaxis, or hemorrhage from the nose, is one of the most common conditions met with in the daily routine of the rhinologist. In spite of the little attention given this condition it becomes at times a factor of primary importance, and frequently a source of great annoyance to the physician and alarm to the patient.

Those of us who work daily in the clinics and out-patient departments of the larger hospitals of this city have no doubt noticed the large number of patients, both children and adults, apparently in perfect good health but subject to very frequent attacks of nosebleed. From the history and examination of these patients it soon becomes apparent that little or no effort is usually made by the physician who first sees this class of cases to ascertain the cause of these apparently innocent nasal hemorrhages and treat them properly.

From a survey of literature made on this subject the following appear to be the most common local causes for epistaxis:

1. Traumatic epistaxis, which results from violent blowing of the nose, or picking the anterior portion of the nasal septum with the finger.

2. Varicose veins on the anterior portion of the nasal septum will frequently begin to bleed when traumatized either by blowing the nose or picking it with the finger.

3. Catarrhal inflammations, acute or chronic, of the mucous membrane of the nasal cavity including the septal wall.

4. Atrophy of the mucous membrane of

the nasal septum anteriorly, due to trauma-tism or disease as in atrophic rhinitis.

5. Deflected septum—anteriorly or posteriorly.

Altho occasionally one does come across a case of epistaxis due to bleeding varicose veins, catarrhal inflammations, atrophic rhinitis or deflected septum, still it has been our experience that the bleeding from such causes is usually negligible and easily controlled. Judging, however, from the number of patients treated at our clinic during the past five years or more, one cannot but conclude that in the majority of cases treated for epistaxis, the etiologic factor was due to no other visible cause but a minute open, squirting blood-vessel on the anteriormost part of the nasal septum, quite easy to locate and very simple to treat. Still, these patients frequently bleed to ex-sanguination due to the inability on the part of the physician to promptly locate the bleeding point and treat it properly. We frequently see these patients with the nose packed to bursting, including post-nasal plugs.

We divide our cases of epistaxis into two groups and treat them accordingly.

1. *Group one.* Patients presenting themselves with a history of repeated attacks of epistaxis, but not bleeding at the time of the examination.

2. *Group two.* Patients presenting themselves during an attack of epistaxis.

GROUP ONE.

History and Clinical Examination.—These patients frequently give a history of nose picking, others emphatically deny it, altho there are clinical evidences of it. The latter is very commonly found to be the cause in children. The attack of epistaxis comes on very suddenly and is alarming. Bleeding may begin when suddenly bending

¹From the Oto-laryngological Department of the Beth Israel Hospital Service of Dr. Samuel J. Kopetzky.

over, when coughing, sneezing, blowing the nose or when bending over to wash. The bleeding is profuse as a rule. The patient calls on the nearest hospital or physician, where, without attempting to locate the bleeder, the nose is packed to capacity before the hemorrhage can be controlled.

Rhinoscopic examination reveals a small white, fibrinous, nipple-like projection at a point either along the mucocutaneous junction of the nasal septum, or anywhere on the anterior one-quarter of the septum posterior to it. In a small percentage of cases the bleeder may be located along the floor of the nose at or just posterior to the mucocutaneous border. Frequently this point is seen to be surrounded by a network of capillary blood-vessels which act as contributaries to the central bleeding point when epistaxis occurs. On dislodging this speck of fibrin by rubbing it with a cotton applicator, a profuse flow of blood follows similar in quantity and character to that of an attack of epistaxis. The fibrinous point thus dislodged is a plug formed at the site of the bleeding by the blood elements which mechanically stops the epistaxis. Slight pressure at this point with cotton on an applicator will stop the bleeding instantaneously.

Treatment.—From observations made of over a period of five years of this type of epistaxis we find that unless this bleeding point and its contributory blood-vessels are permanently eradicated, attacks of epistaxis will recur. Such means of destruction of the bleeding point as can be accomplished with silver nitrate, trichloracetic acid, phenol, chromic acid or the electro-cautery, does not appear to be efficient in permanently destroying the offending bleeder. We, therefore, resort to the following method of treatment. After locating the bleeding

point by inciting it to bleed as noted above, the latter is controlled and the area about it anesthetized by cotton packing saturated with equal parts of adrenalin 1-1,000 and cocaine 10 per cent. The packing is left in for ten minutes and then removed. With a small sharp spoon curette an area of about one-eighth of an inch about and including the bleeding point is curetted away, care being taken to curette the superficial layer of the mucosa only. All visible superficial blood-vessels about the bleeding point are curetted away and followed up in their course as far as they are visible. The curettement is at first followed by bleeding, at times profuse, but it soon stops and is replaced by oozing from the edges of the curetted surface, which gradually ceases. The edges and curetted area are touched up very lightly with a 50 per cent. solution of nitrate of silver. The patient is then permitted to go home and instructed to apply a little vaseline to the treated part and not to blow the nose for at least over night. Healing of the curetted area takes place by granulation and is complete in about a week to ten days. Scar formation does not occur unless the mucosa and the perichondrium have been curetted. Care, therefore, must be exercised not to injure the perichondrium or septal cartilage in order to prevent scar formation or perforation of the septal cartilage.

GROUP TWO.

History and Clinical Examination.—The patient gives a history of a sudden attack of nosebleed, which could not be controlled at all, or only temporarily. At times these patients are brought in a condition of almost complete collapse due to loss of blood. They frequently vomit great quantities of blood and blood-clots. The nasal fossæ are

either full of packing or filled with blood-clots.

Treatment.—The packing is removed. The nose cleared of blood-clots by douching or telling the patient to lightly blow the nose. On examination a squirting bleeder can be distinctly seen on the anterior portion of the nasal septum as described above. The nose is then packed anteriorly with cotton saturated in equal parts of adrenalin-cocaine solution and left in for ten to fifteen minutes. On removal of packing the bleeding point is located either by its persistent oozing or slight rub of area suspected with cotton applicator. The bleeding point is then treated in the same manner as outlined above.

The majority of the patients treated have been followed up and not in one case did epistaxis recur due to bleeding from the area treated. The patient is instructed in the hygiene of the nose and cautioned particularly against the habit of picking the nose.

CONCLUSIONS.

There are cases of recurrent epistaxis where the cause is local and due to a superficial bleeding vessel at the mucocutaneous junction at the anterior nares. It is most common in children and young adults who are habitual nose pickers. The symptoms and bleeding are frequently very alarming and rather difficult to control.

From observation made of this class of cases it has become apparent that unless the offending bleeder is promptly located and completely eradicated by curetting it away with all its contributory branches and the denuded area caused to be healed over by newly granulated tissue, the attacks are bound to recur.

Of the patients treated by this method

none have had a recurrence of epistaxis due to bleeding from the same location.

211 Henry Street.

ACROSS HONDURAS ON MULE-BACK.

BY

E. S. GOODHUE, M. D.,

Roosevelt, Molokai.

It took two days to get the mules ready for our trip from Tegucigalpa across country. We had come on the Pacific side from Salvador to Amapala, a considerable port, stayed all night in San Fernando and hired an automobile to span the eighty-two miles between there and the capital city.

Personally equipped in khaki, leggins, rubber-soled shoes, with belt and *pistola*, I carried a Nicaragua rubber coat and cap; also, mosquito net, hammock, blankets, poncho and canned goods. The eggs and fruit we could get on the way we were told. My *mozo*, a Salvadoranean, had his own mule and outfit, carrying besides his ammunition belt a vicious-looking *machete*.

Starting at 8 A. M., we came thru four gates out of the city up to a *camino*, or fairly good road, which followed the Rio Grande River for miles, thru hardwood trees and showy flowering shrubs and vines. I counted forty-seven varieties of trees unknown to me, besides familiar flora like the frangipanni, kamani, wiliwili, cedar, Ceiba, mahogany, bignonia, vanilla, moon flowers (acres white with them), Mexican creepers, yuccas, cactus and beautiful orchids.

At one place men were cutting stone from a quarry near the river, the mountainside of the road being sheer rock several hundred feet high, which looked as if it had been sliced down with a knife. The brick-red and lavender shades of this rock were replaced farther on by black and a soft grey.

The scenery as we climbed to the mountain tops thru oak and, higher up, pine trees was indescribably beautiful, valleys from 2,000 to 3,000 feet deep, narrow, dense with foliage, the river roaring beneath. Sometimes the valleys were long and wide,

with stretches of pastoral land, villages of adobe walls and tiled roofs, surrounded by gardens of fruits and flowers, banana plants, alligator pear, orange, mango, coffee and mam mee apple trees. Wild pineapple plants covered acres, and many of the fences were made of growing stalks of the tall cactus, of wiliwili and hau trees, while a few well-made stone fences reminded me of New England and Hawaii.

ful for location; second, hard to reach; third, impossible to get away from.

But a railway is being built from the Atlantic coast to Olancho, thru Olanchito and Juticalpa, and the country will be opened up to American enterprise and tourists.

I traveled all the first day up and down twenty summits, to deep river beds, crossing considerable rivers eight times—the

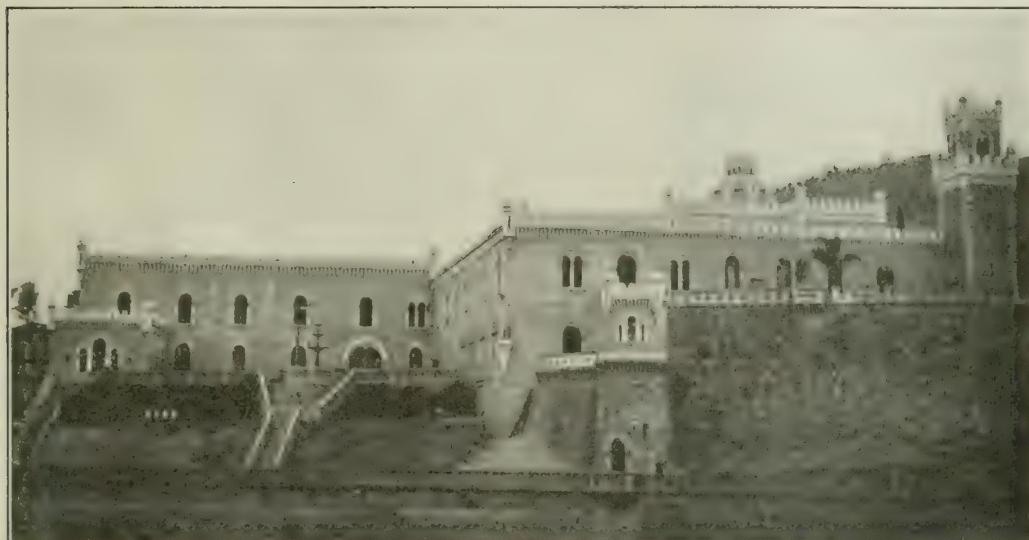


FIG. 1. President's Palace.

When we reached a certain altitude the pine trees were large, some of them measuring twelve feet in circumference, magnificent specimens of their race, scattered here and there as in a park, with a fine bed of grass underneath. These woods furnish a good pasture for cattle, which everywhere appeared to be fat. The trees offer needed shade and pure water is found in some nearby river or brook. These streams everywhere in Central America are a delight, rushing with a merry song over their pebbly beds, cool and clear out of the hills. The latter with their soft, grassy undulations, the pines tall and stately, the fragrant balsamic air, freedom from insects of all kinds, and an occasional mineral spring, hot or cold, combine to make many of these locations ideal spots for sanitaria.

But they lack accessibility. To my friends I have compared this interior country to our conception of Heaven: First, beauti-

Rio Grande, Nando, Lopéz, Estario and branches. Thru some of the valleys and passes the rocks were most picturesque, great masses of brown and pure white lava beautified by centuries of weather, ledges, shelves, boulders, mounds, castellated crags, every form and shape imaginable, in many places towering up hundreds of feet. To one valley the entrance was between two high sentinels of rock, leaving only a narrow pass. Hugging the sides were a few pines. Outside stretched a wide valley, with ranges of mountains, purple and blue. Within the gates a grove of pines covered a series of hillocks, indescribably luring to the imagination of one who loves things as God made them. Here certainly is manifest the hand of a designer working thru the artistic processes of an unerring evolution.

The rivers of the country are clear, rapid, many of them navigable for long distances.

Usually they are bordered by a luxuriant foliage with flowers flamboyant. The stony shores and pebbly beds are indicative of occasional torrents, and the fords offer picturesque exhibits of Indian parties, men, women and children, crossing with their heavily laden mules. At the villages the houses of *adobe* and tile, often lava floors smoothed off, and barred windows, are generally occupied by their owners, sitting



FIG. 2. Ruins in Guatemala.

smoking or engaged in some easy service. Many of the places have signs up, offering for sale ginger ale, cakes, dulces and fruit at very low prices. At one house I offered eight centavos (4 cents) for bananas and the señora kept handing me fruit until I had fifteen bananas in my hands, well ripened and delicious.

Everywhere we met with the greatest friendliness. We had *tortillas* and coffee at one hut, where the señora bustled about,

made a fire in her earthen stove and soon had things set before us. Rain began to fall in the afternoon of the second day out, but half an hour later we reached Rancheritas up in the pines, where we camped. The occupants of the house gave us their room, cooked a dinner of *tortillas*, *frijoles*, fried eggs and coffee, hung up my hammock and closed the heavy doors for the night. My Salvadoranean slept on a bench near his *machete* and *pistola*. Mine, which had been tiresome to carry all day, I laid aside on the table, with perfect confidence in my hosts and *mozo*. Outside on the stone porch were geese, chickens, dogs, cats, goats and hogs. From their attitude and noises I inferred they were exceptionally deprived of their usual liberties. The lava floor was smooth and clean; there were no mosquitoes or other insects.

We met many caravans of mules going to Tegucigalpa, carrying Spanish moss, oak wood, henequen rope and fruits, their drivers following behind in friendly badiage. Returning they brought provisions, boards, boxes, chairs, tables—some of the poor beasts carrying impossible loads. This slow and difficult transportation makes everything which is not made or grown on the place very expensive.

Here and there by the roadside was a grave, with a rude cross of wood, covered with fresh pine boughs and, at one place, carved out of the rock-wall was a large cross all of twelve feet long, the pathetic offering of some devout soul. I saw several smaller crosses on trees and stones.

On for ninety miles inland the country continued much the same, mountainous, healthful, a paradise climatically, unimaginable to the average American who holds preconceptions regarding tropical Central America. If suddenly transported into this piney area, few who had not seen it could imagine they were in the midst of Honduran mountains.

Contrary to expectations, we found the Spanish and natives of Central America most friendly, even cordial. The foreign residents of the capital, including the American Consul and wife, the British Minister and family, Dr. Wilson of the Rockefeller Foundation, Dr. Pounds and family, Mr. Snow, missionary, Mr. Lincoln, Mr. Madden and others, were extremely kind, and courtesies were extended to us by the Pres-

ident, Dr. Smith, Ex-Minister of Public Instruction, Dr. Ribas, editor of a liberal magazine, *Renacimiento* (who knows and greatly admires Calvin Coolidge), Judge Pineda of the Supreme Court, Dr. Belluchi, Dr. Romero, Dean of the College, and Señor Don Santa María, Spanish Consul. Other callers less known were very solicitous, both men and women whom we had casually met.

It would not be surprising if many of the citizens of this country who do not know Americans well were not prejudiced by the conduct of certain travelers who have come here and returned to write books about their experiences. Rev. "Go-Lightly" Morrill is one of them.

Perhaps, in some instances, there is reason for an aside regarding the past history of present residents of Honduras who have come here from abroad, but the general tendency to attribute every foreigner's advent to an escape from justice is ridiculous. Probably the history of nearly all of those who have come here to live would bear the most critical investigation. Let us believe so.

Everybody has read Richard Harding Davis' book on Central America. While it is amusing, it is not always fair or correct. At least I may contradict his statement that there are no fragrant flowers in Central America! O. Henry (Mr. Porter) was here for a while, so also Lafcadio Hearn, the latter writing favorably of the country.

The President of Honduras, Sr. Don Rafael López Gutiérrez, is much loved by the people, and his wife, familiarly known as "Anita," is an able and influential woman. She is just now in the United States and

has the reputation of being able by her brilliant personality to secure the passage of bills in the legislature, appointments to office, and the quick discharge of incompetents. While women do not have suffrage here, they exert political influence and make public speeches. The acknowledgment of their rights by Central American politicians is only a question of time.

This morning I had a most interesting and pleasant interview with President Gutiérrez at The Palace. He came into the general reception room where I was, quite unattended, walked up to me and asked me to sit down while he stood. As he is older than I am, and the President, I insisted on his sitting first, and we stood there for a moment, but I finally yielded. The President resembles his brother, Sr. Don Antonio López Gutiérrez, who was Honduran Minister to Washington, and died there recently, much regretted in diplomatic circles.

I expressed my sympathy to the President and then we discussed many questions—Hawaii, leprosy, closer relations with the United States, my own personal movements, and so on.

I met at The Palace besides the President, Dr. Don Moncada, Inspector-General of Finance, Gen. Guauloupe Reyes of the Army, and Don Edmundo Lozano, editor. These are all well-known and progressive Honduraneans.¹

Tegucigalpa, Honduras, C. A.

¹Used as an adjective we say Honduran house, Guatemalan house, Salvadorean house, but as a noun the proper word is Honduranean, Guatimaltean, Salvadoranean.



CONSTITUTIONAL EVIDENCES OF TOOTH PATHOLOGY.

The dentist must study more carefully the constitutional evidences of tooth and gum pathology, and the physician should painstakingly analyze those constitutional disturbances that are proven to have a clinical relationship with the teeth. The connection between tonsillar infection and these general states has been much more conclusively shown than has the relation with alveolar infection and similar conditions.—Drs. W. E. Mentzer and E. L. Tuohy (Minn. Med.).

"CAMP ROOSEVELT—BOY BUILDER."

BY

LILLIAN EWERTSEN,
Chicago, Ill.

Young people are frequently told by their elders that life is a battle, a fight. And so it is, but the fight is not only a moral one of good against evil, but a physical one of health against disease. Happiness and

go or how to go about it, gains in health, perhaps, but ignores another equally important side, the basis of character formation. Educators have for several years combated, or tried to combat, the evil effects of the long vacation period, as compared with the good effects in health building.

The Chicago public school system has taken the lead in this matter of physical and citizenship training, and has provided

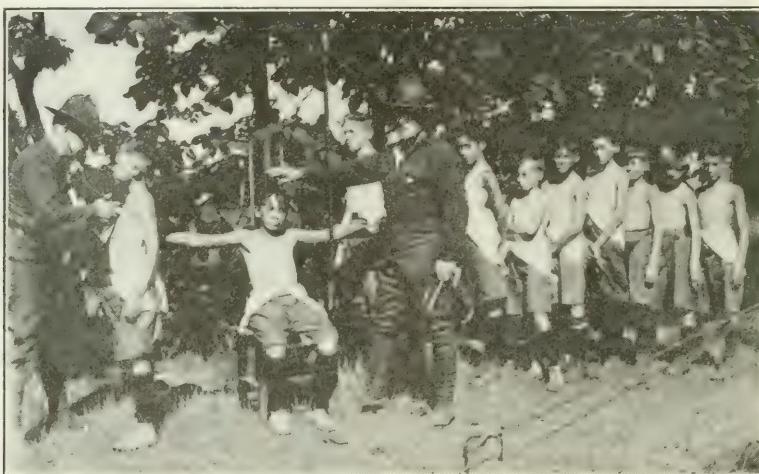


FIG. 1. Every Boy in Camp Is Given a Thoro Physical Examination Upon Entrance.

success in life are impossible without health. The fight for health is, then, worth while. This is, however, not an article on how to become healthy, unless it be that its subject matter on outdoor living is the surest means for teaching "good health."

No person will long remain healthy who spends the major portion of his or her life indoors. The clear, fresh, invigorating, outdoor air is absolutely essential to the lungs. On the other hand, that boy (and this article deals with boys) who spends his time outdoors, idling about the streets of the city, having no preconceived ideas about what to do with his spare time, where to

a plan, available to boys not only of Chicago, but thruout the country, where their summer vacation period may be spent out in the open, amid wholesome surroundings, and yet so planned as to provide a maximum of mental and moral benefits.

Under the leadership of Major F. L. Beals, U. S. A., a summer educational encampment has been founded, under the auspices of the Chicago public school system, the War Department of the U. S. Government, and assisted generously by such national organizations as the American Red Cross, Chicago Dental Society, Y. M. C. A., etc., and financially aided by public-

spirited Chicago business men, who yearly contribute the needed funds to carry on this great work. This cooperation permits of boys who attend receiving the benefits of a more extensive program than that offered by even the finest of the private camps, un-

ciently near roads and railroads to insure the best kind of food supplies. Boys are served milk twice a day, and only the freshest and best cuts of meats are used at the camp. Fresh vegetables are served daily, the great refrigerating plant precluding the



FIG. 2. Down in Camp.



FIG. 3. Teaching Boys the Method of American Red Cross Resuscitation.

der expert instruction, at a fraction of the usual cost for such privileges.

The camp is located near LaPorte, on Silver Lake, Indiana, sixty-five miles from Chicago, on the New York Central Lines. It is sufficiently removed from any town to provide thoro seclusion and yet suffi-

possibility of foods spoiling in the hot summer weather. A mess officer and twenty-one cooks, pastry cooks, vegetable peelers, dish-washers and other assistants are engaged to look after the mess alone.

No one plan could possibly be sufficiently elastic to cover such a large group of boys,

ranging in ages from 10 to 20, from all parts of the country. For this reason Major Beals arranged a camp schedule in three divisions: the summer schools, which include seventh and eighth grades and complete high school courses, credits being honored by educators throughout the United States; the R. O. T. C., or military division, which is designed primarily for boys 14 years and over who prefer a health-building program of outdoor life; and the Junior Camp, for younger lads. The faculty is selected in the main from the Chicago public schools, while U. S. Army officers are assigned for this special duty for military instruction purposes. Competent scout leaders and athletic directors supervise the instruction in the Junior Camp. In all, a total of more than one hundred members comprise the staff with which Major Beals has surrounded himself.

Major Beals occupies the position of Supervisor of Physical Education in the Chicago public high schools, and any requests for aid in solving the numerous "boy problems" which constantly confront parents are promptly complied with. Major Beals understands boys thoroughly, having made them the subject of his life study.

The thoughtful parent will plan his son's summer even more carefully than his regular school year. The summer months can be made the most profitable of the year for a boy. Under expert guidance in the great outdoors, he will grow bronzed, robust, pleasing to the eye and agreeable to deal with.

The camp will open on July 2 for boys in the summer school division, and on July 9 for boys who elect either of the other two divisions. It will close on August 18.

Give the boy his big opportunity.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

VII.

"Ai, hazur, in the name of God give bakhshish!"

At a word of command the driver stopped his bullocks, while Dr. Jordan leaned forward in the cart to see the beggar who was coming toward him.



(Courtesy of Presbyterian Board.)
Holy Man Enduring Self-torture.

A mere boy he was, of eleven or twelve years, timidly holding out his gourd begging bowl. "Pice for my holy master, *hazur*, in the name of Shiva!"

The naked body was well formed and nourished, but smeared with ashes. His hair was matted with cow-dung.

The doctor's eye saw that he was weak and shaken by fever. "Are you ill?" he asked.

"Yes, *hazur*, but my master must be fed."

"Does he give you no remedy for your illness?"

"Yes, *hazur*, he tells me to pick the *Dhatura* berry on Sunday and bind it on my wrist. Tomorrow will be Sunday, and

then I will pick it. But it has been long to wait."

"Where do you live?"

"Yonder is my master, *hazur*. We only beg."

"I will go and speak to your master."

A minute's walk brought them to the spot where the old *faqir* sat on a blanket, his right leg slung over his left shoulder. His emaciated form was partly covered by a loosely draped muslin cloth of dingy hue and many strings of beads.

"He is very holy," warned the boy. "See? His leg has grown that way since he was my age. Some day I shall become like him."

"This boy is ill," ventured Doctor Jordan. "He should go to my hospital, where he can have medicine and proper care."

"The *chela*¹ does not desert his master," responded the old man without looking up.

"But he may die here."

"Take him," he muttered, with a half gesture of the hand. Then to the boy, "Call to Durga as you go, that I may not starve here alone."

* * * * *

In the hospital Kashi, the *chela*, struggled for several weeks against the fever which had gripped him. When he was able to walk about he hovered near the dispensary, watching the patients as they came, and sometimes exchanging a few sentences with them. With skin and hair clean, he was a most attractive figure.

When Dr. Jordan gave him permission to leave he *salaamed* deeply. "Please give me some of your medicine, *hazur*, to carry with me."

"My medicine works better if I give it as needed," answered the doctor. "You come here when you are sick."

"But my master, *hazur*. He will not come. And he is very old."

"Then I will come to him. Just call me if he is ill."

* * * * *

The *faqir* welcomed his *chela* coldly. "I supposed you had died in the hands of the foreign doctor," he chided. "You stayed long enough to die and be born again twice."

"The *chela* craves his master's pardon," replied the boy gravely.

Before he could be restored to his old

relationship Kashi had to undergo purification ceremonies. When he had drunk the appointed quantity of cow's urine, smeared his body with ashes, and plastered his hair with cow-dung, he was again fit to serve the holy man. His stay at the hospital soon faded away into a hazy distance.

The wrath of the gods, which the ascetic had feared would follow his *chela*'s visit, soon fell upon them. Tossing out one arm in the night, the old man struck a cobra which had nestled close to his blanket. Kashi was wakened by the first words of



(Courtesy of Presbyterian Board.)

Kashi, the *Chela*.

fright he had ever heard from his master.

"*Chela*, quick, my *mohoro* stone," he screamed.

As the *faqir* rubbed the pebble over the bite he became quiet. "I have carried it long for this occasion," he mused. "Twenty years ago it was taken from the head of a snake. See how it absorbs the poison. Afterwards you must soak it out in new milk."

"Let me call the doctor, Sahib," begged Kashi. "The moon is full—I will run quickly."

"No, I have remedies enough. Here," untying a knot in his garment, "pound up

¹Disciple.

these ends of peacock feathers while the stone is doing its work."

Kashi put the pounded feathers into a pipe and lighted it for his master. He smoked for a moment, then dropped the pipe and fell in a heap. Kashi hurried to lift him. His face was purple and his breathing difficult.

"Let me lie," he gurgled. "Mix some pepper and *ghee*.¹" Then he went into spasms, which Kashi could only watch in helpless terror.

* * * * *

In the middle of a busy morning Doctor Jordan was attracted by a stir among the patients outside the dispensary. Straight thru the group walked Kashi, naked save for his holy filth, carrying a few articles tied up in a blanket. He knelt and kissed the doctor's feet.

"*Hazur*, my master has no further need of me. I would become your *chela* and help you cure the sick. Self-torture is of no avail."



Endocrinology and Organotherapy.—

To the *American Journal of the Medical Sciences*, November, 1922, Dr. Charles E. M. Sajous contributed an article entitled "Endocrinology as a Key to the Solution of Major Medical Problems." No one, of course, is better equipped than the author to discuss this subject and obviously his views may be expected to be in a high degree instructive. One statement that is emphasized in the article in question is that the physiology of the endocrines as interpreted by the physiologists affords no aid to the clinician. In fact, Dr. Sajous seems inclined to agree with Dr. Swale Vincent, Professor of Physiology in the Middlesex Hospital School, that "we know, after all, very little about the normal functions of the pituitary, no more, indeed, than we know about those of any other of the ductless glands." It is not disputed that the dis-

pointing results of the physiologists' endeavors to solve the mysteries of the endocrine glands, have not been offset by the discovery of the endocrine active principles, some of which, at least, are serving so useful a purpose in every branch of practice, and which some think will revolutionize the practice of medicine. But, Sajous points out that credit for these discoveries does not belong to physiologists. Abel who gave no epinephrin is a pharmacologist. Takamine and Aldrich, who discovered adrenalin are chemists, as are Kendall, who isolated thyroxin, and Robertson, who isolated tethelin. Sajous contends that the vast stores of sound physiologic data, accumulated by physiologists are invaluable in the development of endocrinology, chiefly, tho, thru harmonious cooperation with other branches of medical knowledge, including particularly, clinical medicine and pathology, that is to say, that the cooperation of various medical sciences is necessary to ascertain endocrine functions and that the problem cannot be solved by physiology alone. Sajous in his extremely able presentation of the matter proceeds to develop this thesis. Dr. W. Langdon Brown, one of the foremost British physiologists, has brought out recently the second edition of a small book on the sympathetic nervous system in disease, in one chapter of which he deals with the sympathetic nervous system in relation to the endocrine glands, that is, that important group of these glands, the adrenals, the thyroid and pituitary, which have three features in common; the secretion of each is stimulated by the sympathetic, they all lower carbohydrate tolerance, and they all act and react with the reproductive organs. In an editorial it will be impossible to more than note the work of Dr. Langdon Brown. The reason for referring to his book is that he has made a valuable and suggestive contribution to the literature of the ductless glands and because he is a firm believer in the great future of endocrinology and of organotherapy.

The main object of this editorial is to discuss briefly organotherapy and to lay emphasis upon the point that the discovery of insulin, if it has done nothing else, has drawn public attention to the value of glandular therapy and to its unbounded potentialities and possibilities. It may also be stated that even if insulin only partially

¹Clarified butter.

fulfils the high hopes of its discoverers, it will then have fulfilled a very valuable purpose. However, in this connection it is but fair to say that there are other glandular preparations which have a favorable effect in checking the course of diabetes and that many of these glandular products possess the advantage of being administered by the mouth. There has been recently a great deal of talk, much of it loose talk, concerning oral administration of such remedies. It is declared by certain men prominent in the profession that to give glandular preparations or most of them by the mouth is unscientific and absolutely futile and it is hinted that those who do so are either wilfully or ignorantly deceiving their patients. On the face of it, this contention is absurd. Thyroid extract is given by the mouth as is para-thyroid extract, and in the case of the former, wonderful results in the instance of patients whose symptoms appeared to warrant its employment have been recorded. As for para-thyroid extract, its use has been beneficial in tetany, and Dr. Vines and others commend its favorable indirect results in various complaints in fixing the calcium content of the body. But there is no need to elaborate the argument that glandular preparations given by the mouth are of value in the treatment of certain conditions. He who runs may read and the proof of the pudding is in the eating. It is perfectly true that glandular therapy is not an exact science and cannot be until a great deal more has been learned of the endocrine glands and the internal secretions than is now known. In the course of time, we may know as much of the other ductless glands as of the thyroid gland, and may then learn that oral administration in proper doses is as effective with them as it has been shown to be in the instance of the thyroid. In the meantime, the statement may be definitely made that it has been demonstrated clinically that several glandular preparations administered by the mouth for the relief of certain diseases and conditions have had excellent effects, sometimes remarkable effects. It goes without saying that accurate diagnosis is essential, and that the preparations should be prescribed in proper dosage and with a clear conception of the object of their administration. There are those who sneer at organotherapy because they say that most of this treatment

is empirical. But after all is said that can be said on the subject, is it not true that a great deal of therapeutic treatment is empirical and despite this it cannot be said that this treatment is wholly unsuccessful. On the contrary, Sajous points out in the article referred to previously. Sir James Mackenzie has written recently, "The conception of medical research which is dominant today is so immature and imperfect that it renders fruitless much of the research work. Indeed, so imperfect is the conception that fields essential to medical progress are not recognized." It does not seem that research into the functions of the endocrine glands is one of such fields. Investigators appear to be conservative and prefer to follow beaten tracks, the end of which will probably never be reached, rather than to pursue researches in newer fields which promise magnificent results. The solution of the mystery of the endocrine glands, or the complete unraveling of their obscure points, may mean the discovery of the origin of many deadly diseases, which may arise from the destruction or impairment of the function of one or other of these organs. If investigators can accomplish this object, prevention or successful treatment will be made much more easy. Consequently, research in this direction should be strongly encouraged. The attention of the Rockefeller Institute might be directed to the great possibilities of this fruitful, but up to the present time only partially tilled field. Still, as said before, there is no reason to await a complete discovery of all in connection with the ductless glands before endeavoring to treat diseases by attempting to restore or renew the activity of impaired functions. Sufficient success has attended such attempts already to render it certain that organotherapy is a rational method of treatment and that its future is bright indeed. Clinical evidence does not lie and it has shown that oral administration often hits the nail on the head.

Abuses of Organotherapy.—Cheinisse (*Presse Médicale*, September 9, 1922) reviews the discussion on organotherapy at the last annual meeting of the American Medical Association. He remarks that in the United States "commercial interests have seized the vast domain of endocrinol-

ogy, and nowhere else has the credulity of the public, and, alas, of a large number of physicians, been exploited to such an extent as in the United States. Nowhere else have complex questions, such as those of endocrinology, been presented in a more apparently simple, while at the same time most fantastic form."

Endocrine Insufficiency and Chronic Intestinal Disease.—Sadler (*Lancet*, May 13, 1922) maintains that one-tenth grain of the thyroid extract administered once daily gives the best results in the neurasthenic discomforts of the climacterium and that dyspnea on exertion is an early sign of overdosing. Unexpected results were also achieved in arteriosclerosis associated with deafness and also in ovarian tumors. In deficiency edemas it aids by favoring diuresis. It has helped in epilepsy and melancholia in women. The connection between endocrine insufficiency and intestinal intoxication is shown by the improvement following the use of intestinal antiseptics. Ichthyol was found in albuminuria with chronic parenchymatous nephritis. Some chronic non-infectious diseases can be cured or improved by subcutaneous injections of heterogeneous bacillary proteins (Danysz), or by intravenous injections of peptone or heterogeneous bacillary proteins (Gow). The author recommends the use of endocrine gland substances and protein injections as auxiliaries. This is a good field for teamwork on the part of pathologist, nose and throat surgeon, gynecologist and general practitioner.

without other specific lesions. The beneficial results obtained by the author in these children from medical treatment led him to advise a resort to organotherapy always when the phenomena of compression are not so severe as to compel a quick resort to surgical measures. The administration of iodides should not be insisted on, for children are frequently intolerant of them.

Thyroid Disease.—There is probably no other class of very prevalent diseases, according to Roope (*The Jour. of the Indiana State Medical Association*, April 15, 1923), which in its early stages of harmful activity is so neglected or is so enveloped in obscurity to both the physician and the patient, and in which the patient is so little able to help clear away the fog, or when the fog is cleared is less willing to help make the management of the case such as to bring a happy outcome.

Colloidal Goiter.—Gillette (*The American Physician*, March, 1923) asserts that the commonest type of goiter is the colloidal, occurring most frequently as the so-called adolescent goiter in young girls just past the age of puberty. A large percentage of these flourish for a few years and then disappear permanently, while of the remainder a portion vary in size from month to month, but cause very little damage, while another portion develops in size and later necessitates removal. About thirty per cent. of this class of cases will find its way to the surgeon, according to reports from the Mayo clinic.

The colloidal material is a normal constituent of the thyroid gland, but for some reason its ability to be absorbed is decreased, or perhaps the ability of the cells lining the acini to dispose of it, is lessened, so that there is an accumulation of colloid that may be harmless, or may press on the trachea and interfere with breathing. Many of these so-called harmless goiters later develop signs of toxemia of the most severe type. After some years of harboring an innocent goiter the symptoms of acute Graves' disease suddenly manifest themselves in as severe form as tho the toxemia had occurred early in life.

Congenital or Familial Goiter.—Congenital goiter is rare, claims J. Bravo Frias (*El Siglo Medico*, March 4, 1922), in endemic regions and, altho exceptional among sporadic cases, instances of both kinds have been reported not only in man, but among animals. Heredity, considered as a general rule of endemic and sporadic goiter, is not present in this case. Syphilis, as it usually occurs, has little influence on pathogenicity, altho it exists in this instance coincidently with the goiter, but seems not to have a causative relation, inasmuch as goiter is present in five brothers and sisters

Microscopically a colloidal goiter appears with the colloidal material unaltered from the normal, except for the increase in amount and with the cells lining the acini unchanged, but when the toxemia occurs the colloid has altered in appearance and shows a marked degeneration.

The author states that thyroid extract will many times cause colloidal goiters to disappear. A therapeutic test can also be made by the giving of the extract, in which case the symptoms will quickly be relieved or aggravated.



Future of Medical Education in England.—The future of medical education in England cannot be foreseen or foretold with any confidence of accuracy because it depends largely on what the future of medical practice will be. There are signs which appear to be multiplying, that medical practice in England is to undergo in the future, perhaps not far distant, profound changes. Indeed, it has undergone changes since the establishment of a Ministry of Health and is undergoing them at the present time. Preventive medicine is coming greatly into vogue, and this branch of medicine is fostered and encouraged by the Ministry of Health, as no doubt it is fitting that it should be so aided. But this attitude and its results so far afford striking evidence of the changes which have taken place in medical practice and of the probability of much greater changes in the future. Sir George Newman, the Chief Medical Adviser to the English Ministry of Health, has issued recently a pamphlet entitled "Recent Advances in Medical Education in England." In this memorandum of 200 pages, written with the facility, cogency and graces of literature which distinguish all the writings of Sir George Newman, the advances of English medicine are limned in an artistic and a masterly manner. But as the medical correspondent of the *London Times* pertinently points out in its issue of April 28 last, there is a great deal of special pleading in the memorandum and

the advances are not all "recent." Some of them lie in the future. In this memorandum the fact is emphasized that it is of vital importance to the state, that medicine should be well and soundly practiced, for upon the effective discharge of its duties depends the extension of the frontiers of life. Yet this cannot be rendered apart from efficient medical education, which in its turn cannot be furnished exclusively out of the students' fees or university endowments. Sir George Newman goes on to say that in his opinion there can be no doubt that financial assistance from the Treasury is justified—this is the gist of the pamphlet—and the present memorandum contains evidence of the wise and economic use to which the subsidies, hitherto sanctioned, have been placed. It does not require much perspicacity on reading between the lines to understand, at least, a part of the meaning of the foregoing sentence. If the state is going to assist further in medical education, the obvious corollary is that it will increase its control over not only the education, but the practice of the medical man. Health officers produced under the aegis of the Ministry of Health will be educated in the fashion which that department of the government deems the best. Sir George also refers to the Imperial and International School of Hygiene for the establishment of which in London the Rockefeller Foundation will find the money for the erection of the necessary buildings, and which the British Government will staff and maintain. Attention is directed in the memorandum to the fact that the British Government "will provide for the training and equipment of public health officers in the various branches of preventive medicine." There is no doubt that in Great Britain changes of a radical, almost of a revolutionary character have been conceived in the minds of the responsible for the policy of the Ministry of Health. The question arises, are the changes likely to be of benefit to the public at large and to the medical profession? In Great Britain it seems to be accepted by the majority of those who have studied the subject that preventive medicine is the medicine of the future.

But members of the medical profession do not seem to be so greatly impressed by the view that, even if this is true, that preventive medicine can be best practiced un-

der the direction of the Ministry of Health. Insurance medical practice, according to the opinions of many, has not been a conspicuous success. Some hold that while it has injured the medical profession in many ways, it has not benefited particularly the patients treated in the insurance act. The possible outcome of the encroaching power of the state over the medical profession, namely, the nationalization of medical service, is what medical men in Great Britain dread. They fear the loss of their independence and the domination by politics. The labor party, which is a power politically, is eager for nationalization and if such an event came to pass it looks as if doctors in Great Britain would become, to some extent at least, the servants of associated societies which are composed of those who earn their living by manual work. It is unfortunate in the present state of affairs that the medical profession in Great Britain wield no power politically. There should be no question of an alliance between politics and medicine, but of course if the state controls medicine, those in power would be able to dictate to medical men how they should practice, and obviously they must be educated in conformity with their methods of practice. The medical profession in Great Britain seem to be at the parting of the way, and it will be instructive for doctors here to closely observe the trend of events there. American members of the medical profession can learn much from the advances and perhaps more by the errors of their brethren on the other side of the water, and can profit by the first and take warning by the last. A state-controlled medical profession does not commend itself favorably to American medical men, and there seems to be no insuperable reasons why preventive medicine should not be practiced excellently, independently of the state. Indeed, bureaucratic methods would never in one pattern destroy initiative and are largely destructive of originality. Altho Mussolini, the leader of the Facistists in Italy, declared a short time ago that people nowadays did not require freedom, but rather discipline, the English-speaking races certainly do not hold with this view. Discipline to a point is beneficial, but beyond the point is abhorrent to freedom-loving people. The aid of the state is valuable, in a measure indispensable, to

carry out large public health projects, and is eminently useful to prosecute health hygiene of any kind successfully. But it is altogether another matter to dictate to the medical student more or less exactly what his education shall be and when he has graduated to tell him how he shall practice nationalization of medicine, is contrary to the inherited instincts and traditions of the medical profession of this country.

A Humorist's Warning to Laymen.—

The *Moniteur Medical*, a widely read French periodical, in reporting the case of a woman who committed suicide in despair after reading medical text-books dealing with her malady, warns laymen to avoid the reading of such books as a menace greater than their maladies. Taking this as his text, G. de la Fouchardiere, France's leading humorous writer and Molièresque, in his delight in poking fun at the expense of the medical profession, contributes the following amusing comment in a Paris newspaper:

"A lady, aged thirty-seven, suffered from rheumatism. She began to read medical text-books. She read all she could about her ailment. She read such terrible things that she came to the conclusion that it would be as well to end the agony at once. She thereupon committed suicide. The *Moniteur Medical* gives the lady the following advice, the only fault of which is that it comes a trifle late: 'Do not read medical books. Meet your ailments with good humor and resignation. When you feel depressed, try to find some one unhappier than yourself and seek to relieve him a little.'

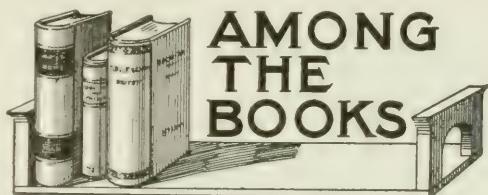
"Of all dangerous books, the most dangerous are medical books. Philosophic books lead you to philosophic speculation and thereby to bewilderment. Pornographic books destroy your moral sense. Novels of love and adventure lead to adventure and love, that is, to the worst disillusionment. If you read poetry, you are tempted to write verse, which is highly dangerous to your mental equilibrium. But all this is nothing. Medical books lead to loss of life, which is the only boon on earth, or at least a boon without which all the others would be useless. For medical books are full of

ailments which you can contract, some thru contagion, some thru imagination, but which can all be contracted thru reading. The moment you have read the description of a disease you feel the symptoms more surely than if you had been guided only by your unconscious reactions. Just as you yawn when you see someone else yawn, just as you feel the need to scratch yourself when you see the man in the Cadum Soap advertisement scratching himself, in the same way you feel a pain in the kidneys, in the liver or in the stomach, the moment you learn, in however didactic a manner, the effects of a lesion of the kidneys, stomach or liver. A specialist once told me of the case of an ataxic who contracted syphilis from a book. I cannot say if the specialist was chaffing me, or if the patient, thru modesty, was chaffing the specialist. But the case is not altogether impossible.

"Catching diseases from books isn't bad, but it becomes dangerous when, having contracted them, you try to cure them. After having read a variety of medical books you come to the point where you consult a variety of doctors, who cannot possibly agree on your case (as nothing ails you), but who, from professional necessity, are compelled to find something wrong with you, otherwise they will not earn the fee they exact for ministering to you. Having consulted a variety of doctors, you try a variety of remedies. There are many of these on the fourth page of any newspaper, but you can never reach the bottom of the page alive. The *Moniteur Medical* expressly advises you to avoid medical books; it also expressly advises you to avoid doctors. In order to keep well, says this periodical which thereby injures the profession, minister to those more ill than yourself. That is the formula of Molière. For, if it is dangerous to find ailments in yourself, it is quite harmless to discover them in others."

Sing and Live Long.—Despite the veritable flood of authentic and unauthentic elixirs of youth and secrets of longevity which have submerged the population of France in recent months, there appears a new spokesman for longevity with a new secret, this time a member of the faculty

of the Sorbonne. Professor Froissard, whose single counsel is "Sing." Only two months ago an eminent colleague of his recommended the reading of the "Essays" of Montaigne as conducive to longevity. Now Professor Froissard is giving a series of lectures on "phonotherapy," or the science of song as a means to health. A survey of the span of life of the world's great singers would seem to bear out Professor Froissard's contention. Patti lived to the ripe age of seventy-seven, Mme. Viardot to eighty-one, Duprez to ninety, Faure to eighty-four, and Jean de Rezske is still alive. However, the Professor's counsel is a highly dangerous one, not to the singer, but to his neighbors. Song may be a stimulant to the vitality of the singer, but the exercise of that prescription might be highly detrimental to the nerves of the listener if the singer is not a Patti.

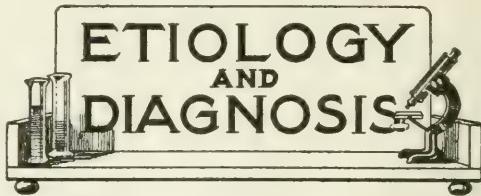


A Practice of Medicine for General Practitioners.¹—Altho it is not stated in the editor's preface that this volume is intended for general practitioners and senior students, it is more than probable that it was chiefly written with this object in view. The editor has called to his aid 25 well-known authorities on the subjects with which they deal, for, as he rightly points out in the preface, it is impossible for one authority to do proper justice to the whole of medicine. The book is divided into 20 sections, opening with a good article on Fever by Dr. M. S. Pembrey, and continued by Sir Thomas Horder and Dr. John Matthews in a very clear and interesting consideration of the subject of Infection, Im-

¹A Text-Book of the Practice of Medicine. By various authors. Edited by Frederick W. Price, M. D., F. R. S., Edin.; senior physician to the Royal Northern Hospital and physician to the National Hospital for Diseases of the Heart, London; formerly examiner in medicine at the University of St. Andrews. Oxford Medical Publications, London; Henry Frowde and Hodder and Stoughton, 1922, pp. 1753, 35s.

munity and Immune Therapy. Section 2 deals with Bacterial Diseases, the Mycoses, Spirochetal Infections, Protozoal Infections, and Infectious Diseases of Doubtful or Unknown Etiology, and Dr. Charles R. Box's articles on Infectious Fevers are well written and very readable. Section 3 is concerned with Tropical Diseases of Doubtful or Unknown Nature, and section 4 with the Diseases Due to Metazoan Parasites, for which Dr. G. C. Low has written very fully. We are glad to find this section included. Diseases Due to Physical and Chemical Agents form section 5, and those of Metabolism section 6, and attention may be drawn to the article on Diabetes by Dr. George Graham. Diseases of the Endocrine Glands comprise section 7, and Diseases of the Digestive System section 8, for which Dr. A. F. Hurst is responsible. The latter section is, perhaps, too full for a book of this size. Diseases of the Lymphatic System, of the Blood and of the Spleen next receive attention. The editor himself has naturally written on Diseases of the Circulatory System, and Drs. R. A. Young and G. E. Beaumont have been allotted the Diseases of the Respiratory System, and these two sections, with that containing Drs. James Collier and W. J. Adie's excellent description of Nervous Diseases, are the three best sections in the book. Diseases of the Skin and also Psychological Medicine likewise find a place in these 1,753 pages. We are unacquainted with any one-volume text-book of medicine in which so much valuable information is contained in so comparatively small a space. All the diseases are excellently described, very concise, and full of detail, and we would draw particular attention to the paragraphs on treatment, which will be found to be invaluable. The editor is to be congratulated on the way he has performed his task, and the various authors on the way they have done their share. The book is printed on India paper, is light to hold, and well bound and printed. We can heartily recommend the book.

Rheumatism.—Rheumatism is usually dependent primarily upon gastrointestinal derangement (*Medical Summary*, April, 1923). Remedy the cause and the rheumatism will be cured.



The Diagnosis of Diseases of the Urinary Tract.—In a comprehensive article in the *Boston Medical and Surgical Journal* (August 17, 1922) Quimby gives the following as working rules in our present state of knowledge concerning diagnosis of diseases of the urinary tract: 1. Do not rush to the use of such modern diagnostic aids as the cystoscope before having taken a detailed history of the patient and having made a thoro general physical examination. 2. Examine the urine, especially for microscopic amounts of pus or blood, but do not feel that if the urine is normal this fact excludes the possibility of diseases in the urinary tract. 3. Look with the eye of a skeptic on all shadows in the plain X-ray plate which seem to mean lithiasis within the urinary passages until such shadows have been proven by further measures to be in fact within these passages. 4. The accurate and early determination of the exact source of pus or blood in the urine is imperative. This can be satisfactorily accomplished only by the use of the cystoscopic and urethral catheter. 5. The data to be learned by the pyelogram are frequently of the greatest importance.

Headaches of Nasal Origin.—Among the nervous symptoms of nasal origin Watson-Williams (*Lancet*, London, February 18, 1922) asserts that headache is the dominant symptom, and now very generally recognized as being sometimes attributable to the nose, sometimes to ocular defects, or to the teeth. The existence of a persistent or recurrent purulent catarrh may be obvious or elicited by inquiry, but the non-purulent discharge is apt to be ignored by the patient, and must be sought for. The neurasthenic symptoms are usually worse in the morning on waking, or for the first hour or two after rising; they are often periodic, better in warm, dry weather, worse in cold, damp weather, always aggravated by intercurrent colds. But the history of the case may reveal many facts which point to a source of recurrent infection; headache or heaviness, recurring sore throats, muscular rheumatism, rheumatoid arthritis, gastrointestinal catarrh and appendicitis are so frequently associated with a chronic sinus infection that their interdependence is sometimes hardly open to doubt. A sinus infection may be of some years' standing, and a constant source of ill health, without seriously arresting the patient's notice. Often the existence of a latent nasal catarrh can

be determined only by direct inspection of the nasal passages anteriorly and posteriorly and, perhaps, only by passing a fine cannula into the sinuses and washing out or sucking the contents back into a sterile syringe and submitting them to bacteriologic examination and culture.

Measles and Drug Rash.—In the *Bulletin of the Department of Health*, New York City, for April 28, 1923, reference is made to the difficulty of making a diagnosis of measles when an adult has exhibited a rash and has taken phenacetin.

Altho the representative of the Health Department referred to the rash as "measly," measles was excluded after two examinations for the following reasons: 1. The patient had had measles before. Second attacks, especially at 45 years of age, are exceedingly rare. 2. The rash did not involve the face, in the confluent and unmistakable manner characteristic of measles. A typical appearance and evolution of the rash is extremely rare in asthenic adults. 3. The mucous membranes of the eyes, nose, mouth and pharynx were not involved. The spots on the insides of the cheeks were ruptured vesicles and not Koplik's spots. The presence of Koplik's spots implies a congested and reddened mucosa. 4. Acetanilid and kindred drugs (phenacetin) are known to cause, in rare instances, morbilliform rashes similar in type to the one under discussion. 5. The patient had received phenacetin.

Etiology of Acidosis.—Acidosis results from an unbalance of food and deficiency of the vitamines, says a writer in the *Medical World* (April, 1922). The symptoms of acidosis in the milder forms are weakness, anemia, shortness of breath, palpitation, nerve pain in various locations, or tenderness of nerve; legs swelling below knees. Of the severer forms, there is also dilated pupils, swollen gums, cardiac dilatation, muscular atrophy, various paralyses, hemophilia.

Chronic Inflammation of the Appendix.—C. Whiteford (*Practitioner*, August, 1922) protests against the theory that chronic inflammation of the appendix is a disease of great frequency and easy diagnosis, a cause of much chronic abdominal pain and discomfort, and a cause of such diseases as gall-stones and duodenal ulcer. The author also protests against the corollary that removal of the appendix results in the disappearance of the symptoms which the appendix is said to be producing. He asserts that the operation for removal of the chronic appendix not only fails to cure, but often makes the patient worse, and that attribution to the appendix of obscure

abdominal discomfort hinders investigation into the causes of the pain. In the surgeon the theory induces laxity in diagnosis, while the small incision made in operating renders a thoro examination of the abdominal contents a mechanical impossibility. In the layman the failure of the operation to cure, as well as its after-effects, is causing doubt as to the necessity for operation in acute appendicitis and mistrust of the surgeon. Hence he maintains that in the interests of both surgeons and patients the diagnosis of chronic inflammation of the appendix as a condition requiring operation should be abandoned.

Urine Volume Index.—Héloquin (*Presse Médicale*, November 8, 1922) found that healthy men eating the same meal at night voided different amounts of urine in the following twelve hours, the range being from 400 to 1,395 c. c. He theorizes that these wide differences are due in part to the sodium chloride content of the body at the moment. Hence to obtain an index for comparison he had the subjects refrain from salt until the salt content of the urine was at the lowest physiologic limit. They then all voided practically the same amount of urine in the first four hours after taking a supper with a given amount of water. The range was only from 500 to 750, this parallelism being in striking contrast to the wide range in the first series of tests. Hence he insists that tests of kidney functioning must be preceded by restriction of salt for three days, or no reliance can be placed on the findings. He accepts 550 to 650 c. c. as the standard range for the first four hours after drinking 600 c. c. of water. The volume index is thus practically 100; for 100 c. c. of water ingested, 100 c. c. is voided. This represents the absorption of the water, the pressure of the blood fluid on the kidney filter, and the permeability of this filter. The pressure on the kidney filter depends on the blood-pressure in general, and the effectual blood-pressure is represented, as he explains, by a figure obtained by adding to the diastolic pressure one-half the differential pressure. The urine output index can thus be expressed by dividing the volume index by this figure. In normal conditions he calculates the output index at 8.7. He cites a number of cases of kidney or heart disease showing a range from 5.26 to 10. His experience with this urine output index in hundreds of cases in the last four years has convinced him of its instructive value for estimating the extra-renal and renal factors in diuresis, and explaining among other things the apparently paradoxic polyuria of Bright's disease, and the oliguria with permeability unimpaired. He

$$\text{gives the normal output index as } \frac{100}{5 + \frac{9}{2}} = 8.7.$$



Diabetes in Children—Nobécourt (*Médecine*, Paris, August, 1922) warns not to mistake for glycosuria the alimentary lactosuria of infants with gastrointestinal derangement. The mild form of diabetes in children can generally be cured by restricting carbohydrate intake, but sometimes it persists unmodified and without aggravation up to adult life. The child develops apparently normally. Sometimes the mild form changes to the grave form, or the diabetes may be grave from the start, with a tendency to denutrition or to hypotrophy or both. The prognosis should always be reserved; the effects of treatment will generally tell the story.

Anesthesia—Labat, writing in the *Annals of Surgery* (December, 1921), lays emphasis on the fact that regional anesthesia, in which should be included spinal anesthesia, has developed into a science and should be treated as such. To be successful the anesthetist should have a perfect knowledge of anatomy and surgical technic, and should be familiar with the chemistry, pharmacology, and the physiologic effects of the drugs he administers. He should know how to handle the patient before and during the operation and, above all, have mastered the general principles of the methods.

The surgeon who operates under regional anesthesia should be familiar with the general principles of the method so as to be able to complete the anesthesia during the operation. He should not have recourse to general anesthesia when one or two injections, judiciously made, would render the operation painless. Such knowledge would also give him a correct idea of the extent of the anesthetic field and in a general way help him to understand the after-effects, if any, and the treatment thereof.

The beginner should not be expected to be successful with his first attempts; partial failures can be remedied by inhalation narcotics. He should not abandon the method as being worthless or insufficient. He should remember that even experts may fail and should try it again, observing scrupulously its principles until he succeeds. There is no reason why he should not succeed when in the hands of others the results have been so satisfactory. But he can readily understand from the foregoing how necessary it is to have an exact knowledge of the technic and attending circumstances of spinal anesthesia if he wishes successfully to employ such a delicate procedure.

Novocaine is the anesthetic drug of choice

in both regional and spinal anesthetic procedures. It should be pure, and when injected intraspinally, pure and sterile and dissolved in the cerebrospinal fluid of the patient. The dose of 0.01 gm. of novocaine for each fifteen pounds of the body weight of the patient, injected very slowly, is safe for any operation below the diaphragm. The author suggests that every young medical student should devote part of his time to studying this method so as to be able to apply it later on in his own private practice. And since a knowledge of general surgery is required, he who is anxious to make it a specialty should have a post-graduate course in that subject.

Colon Disease.—A chronic affection of the colon is described by Van Lier (*Nederlandsch Tijdschrift v. Geneeskunde*, Amsterdam, December 30, 1922) as characterized by attacks of pain, constipation alternating with diarrhea, and tenderness at numerous points in the colon, and pain on pressure when jarred. The clinical picture resembles that of lead colic so closely that a similar mechanism is probably involved. When a colitis lasts longer than six weeks, it probably belongs to this category. He regards it as an incurable affection which we can improve and keep under control by preventing fermentation and the use of drastic purgatives, and by regulating the diet and encouraging the patient; but our main task is to protect the patient against useless operations. The disturbances are liable to be ascribed to gall-stones, movable kidney, gastric ulcer or ovarian disease. Nearly all these patients had had the appendix removed, but without effect on the clinical picture. Van Lier describes a number of cases. One patient consulted a surgeon, who diagnosed a tender tumor in the colon and advised operation. The patient then went to an internist, who diagnosed spastic contraction and advised medical measures. A second internist diagnosed movable kidney and advised nephropexy—three separate diagnoses in one morning. If the entire length of the colon had been palpated, these blunders would have been avoided. In recent months Van Lier has saved two patients from cholecystectomy, and has seen seven others disappointed by the persistence of symptoms after appendectomy.

The Treatment of Psoriasis By X-ray Stimulation of the Thymus.—Basing his theory on the belief that psoriasis is due to lack of functional activity of the thymus, Brock (*Strahlentherapie*, September 15, 1920) undertook the stimulation of this gland by X-rays, carefully shielding the thyroid and parathyroids and using very weak doses. Aside from the mistakes made by using too strong doses, the author claims that the results were remarkably good. In hyperactivity of the thymus, in status thymicus, psoriasis never occurs. In pregnancy and during lactation, psoriasis is apt to occur,

which heals as soon as this overactivity of the reproductive organs ceases and the thymus is no longer antagonized. Psoriasis is also apt to occur at puberty, when this reproductive antagonism is again pronounced. Brock is confident that psoriasis develops because there is not enough stimuli from the thymus. If the thymus is stimulated by mild doses of X-rays, the psoriasis is cured. If it is paralyzed by too large doses of X-rays, the psoriasis becomes worse.

Carbohydrates in Nausea and Vomiting of Pregnancy.—According to Harding and Watson (*Lancet*, London, September 25, 1922) an exceptionally effective means of combating nausea and vomiting of pregnancy is: (1) The use of carbohydrates to correct the lack of maternal hepatic glycogen. This would range, depending on the severity of the condition, from an alteration of diet in the direction of increasing cereals, vegetables, and fruit in mild cases, to the use of intravenous and interstitial glucose injections in the very severe forms. (2) Rest in bed with isolation in cases in which the neurotic factor makes itself pronounced, and it usually does so in all but the very mild cases. As a sedative, bromide may be given by rectum in doses varying from 30 grains once in the evening to 40 or 60 grains three times daily, depending on the clinician's recognition of the severity of this factor and the patient's reaction to rest and isolation alone. As a general rule, however, the higher dosages are unnecessary. Their need is most evident when the patient vomits not only any fluid given by mouth, but when the vomitus begins to be in excess of this and the tissue fluids themselves supply the necessary water. (3) The keeping open of the bowels, usually in a gentle manner, by an occasional laxative for the mild cases, and an evening laxative, followed by a cleansing enema in the morning for the hospital cases. (4) The administration of water to correct any dehydration, and by doing so to ensure the flow of all secretory and excretory fluids as far as the water factor in them is concerned. Fluids to the amount of 60 ounces are urged by mouth in all cases. Additional fluid in the severe cases will be supplied with the glucose, either by rectum or by interstitial or intravenous injections.

Hypertension in Pregnancy.—Williamson (*Surgery, Gynecology and Obstetrics*, November, 1922) concludes:

Hypertension may exist throughout pregnancy with no apparent sign of kidney lesion.

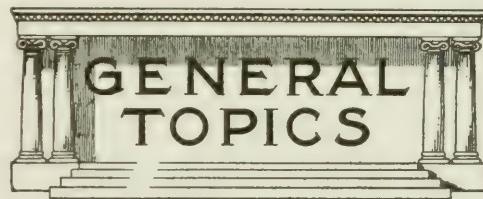
Some cases of hypertension in pregnancy may be carried thru to a successful termination with careful watching.

Cases in pregnancy with hypertension without demonstrable kidney lesions are probably of vascular origin.

The most likely cause of such hypertension is that it is of toxic origin with the primary action taking place directly in the arterial wall.

The prognosis of such cases is always grave and doubtful, both for immediate and subsequent life and the patient should appreciate fully the import of hypertension.

Alcohol Treatment in Prolapse of Rectum.—Findlay and Galbraith (*Lancet*, London, January 13, 1923) insert a finger in the rectum as a guide and then inject 1.5 c. c. of absolute alcohol on each side into the perirectal tissue at a depth of from 2 to 2½ inches. An ordinary exploring syringe is employed, the needle being inserted on each side about one-quarter inch from the anal margin. The needle punctures are sealed with collodion, a pad is placed in the perineum and kept in position by strapping the buttocks firmly together. Instructions are given that the child must move the bowels only while in the recumbent position, the fecal matter escaping by the side of the dressing. The pad and strapping are reapplied daily for a week. Forty-one children have been so treated by the authors. In two cases the operation had to be repeated once, and in one case twice, but in all the other examples only one treatment was necessary to obtain a cure.



Boosts for the Cults.—Every boost for Christian Science and the cults is a nail in our own coffin (*Med. World*, January, 1923).

How do we do it?

Every time we overcharge.

Every case in which we are careless and slipshod.

Every time we knock.

Every time we fail.

Every time we promise a cure.

Every time we give the inelegant pharmaceutical.

Every time we fail to treat the patient with Christian Science and osteopathy when they need it.

How Normal Children Grow.—Basing results on the examination of over 2,500 normal or near-normal children for thirty or forty physical traits (1,500,000 physical measurements were involved in the work) and correlating that knowledge with tests showing mental growth, Dr. Bird T. Baldwin (*Trained Nurse*, February, 1923) makes the following summary:

There is a close relationship between physical growth and mental growth. The mentally superior children are also physically superior, on the average.

There is also another relationship between the mental and physical growth. There is a period of adolescent acceleration in the mental growth of children, at the ages of from eleven to fourteen; with the superior girls this adolescent acceleration appears at eleven years of age; with the average girls it appears about twelve. With the superior boys it begins at thirteen, and with average boys the adolescent acceleration in mental growth begins at about fourteen.

In other words, these records show that there is a close relationship between stages in mental growth and stages in physical growth. They show that children who are superior mentally as a rule are older or superior physically. They show that there is a wide range in physiologic differences among children of the same chronologic age.

Obstetrical Analgesia.—J. D. V. Young, in a recent issue of the *New York State Journal of Medicine*, states that after an experience extending over six years finds that nitrous oxide produces the ideal obstetrical analgesia. Used as an analgesic it is absolutely safe for mother and child and it may with safety be continued for hours. It shortens labor by increasing pain value, it eliminates fear and pain dread, thereby improving the morale of the patient, it decreases the frequency of needed forceps extractions and versions and it minimizes maternal exhaustion. Analgesia enables the voluntary forces of labor to be brought into full play, but it must be used with a complete knowledge of the case and all contraindications eliminated. Nitrous oxide stimulates the expulsive force and, therefore, in rapid deliveries a more potent anesthesia is indicated. Properly given, there is no inter-contraction effect. During the analgesia the patient will obey instructions.

Posture in Women's Work.—The effect on the physique and on the health of industrial workers of the monotonous and rapid repetition hour after hour and month after month of movements in themselves light and simple has recently begun to challenge the attention of the medical profession. Especially has it done this since this work, so characteristic of modern industry, has been more and more monopolized, unusually on a piece basis, by women whose deftness and swiftness have enabled them to take possession of occupations which did not require much muscular strength.

So far, altho conclusive proof is lacking, the weight of opinion seems to be that serious injury may be caused by any work, the performance of which requires cramped, constrained or awkward posture. Less general and less positive is the opinion as to the effect of the work on the nervous systems, especially in women.

Work that requires bent shoulders and dropping of the head compresses the chest and interferes with the breathing, and this alone leads to many ills. It also forces the ribs and all that they inclose down upon the abdomen

and tends to displace its organs. Among other results, this pressure causes a "folding in" of the wall of the abdomen along the belt line and the partial stoppage of material moving thru the intestines, and this leads to constipation, diarrhea, nervousness, abnormal fatigue and headaches.

Work that requires a sideway "slouch" crowds the ribs between a low shoulder and a high hip on one side and expands them on the other side, interfering with the breathing and paving the way for tuberculosis. In girls and women this slouch also tends to displace other important organs.

Such results may be prevented or lessened by change of work; for instance, a change from work that requires stooping forward to work that requires reaching upward, or that requires a sideway slouch, or that requires no particular attitude. Such a change naturally involves a loss in speed, which for a time may cause serious money loss to a piece worker; but, especially in young girls, it will help to prevent ill health and possibly deformity.

Proper chairs are also helpful. For instance, as sitting all day at one's work is probably nearly as bad as standing all day, a combination of chair and desk (or work bench) whose relative heights would permit one to work with equal ease whether standing or sitting may be advantageous. Many types of "proper" chairs have been designed, but, naturally, few or none of them seem to be fitted to all types of work. Certain factors seem, however, to be advisable in all chairs.

All chairs, for instance, that are too high to permit the occupant's feet to rest firmly on the floor, should be provided with a footrest that would prevent the lower part of the legs from dangling and the upper part (thighs) from pressing against the edge of the chair; practically, this means that women should not be called upon to use chairs built for men. Rests for the back are also extremely helpful in lessening fatigue.

That the constant repetition of a movement does in time affect the nervous system is more than probable, but how importantly it affects it has not been established. Anderson, for instance, states that girl after girl in a cigarette packing factory was found when off duty to be constantly repeating the motions she made while at work, and insists that such tendencies should be investigated.

The best preventives so far suggested seem to be the daily utilization of the forenoon and afternoon rest periods now in vogue in most factories either in complete rest or in exercising muscles not used in working time. When combined with periodic changes in occupation that call for changes in the muscles used such utilization should give effective help in preventing serious troubles.

Value of Cheese in the Diet.—In the making of cheese, says S. K. Robinson (*American Food Journal*, March, 1923), the greatest part of the casein and fat is brought down in the curdling

process, leaving behind in the whey the milk, sugar and albumin. Most of the mineral substances go into the cheese. The three most important constituents, *viz.*, the calcium, phosphates and the iron, are lost only to a small extent. Since the cheese is rich in fat, fat soluble A, or the growth vitamine, is retained almost completely in the cheese. The vitamines B and C are also retained, but to a smaller extent which has never been exactly determined. It is clear, therefore, that whatever is said about the nutritive value of milk is to a great extent also true of cheese, because the most important constituents are retained to a very remarkable degree. As a matter of fact, being the more concentrated food, cheese enhances several fold some of the benefits derived from a milk diet. The American diet is likely to be made up chiefly of the grains and meat products. Both of these foods are known to be deficient in calcium. Indeed, it may well be said that the deficiency in calcium is the big gap in the American diet today, and it is primarily in this connection that cheese becomes an essential factor, because cheese contains a combination of calcium and phosphorus in greater proportion than in any other food, organically combined with the casein in such a way as to make it readily available. Altho bread and meat may be a balanced ration from the standpoint of supplying carbohydrates and protein, it is decidedly deficient and unbalanced from the standpoint of supplying the mineral constituents. The best way to stabilize this inequality is to increase the amount of cheese and milk consumed. Concerning the digestibility of cheese, a wrong conception has been prevalent. Cheese, being a food in which the protein is closely intermingled with fat, remains a little longer in the stomach than is the case with other foods, and gives a sensation of fulness and heartiness. In the intestine, cheese is digested very quickly. Cheese, ingested together with other foods, has a marked influence in increasing the digestibility of the entire meal. The English and Scandinavians, who use many times over the amount of cheese that we do, are not troubled with as much constipation as are Americans. The number of calories that cheese furnishes per pound is quite variable, depending on the cheese in question. Hard American Cheddar cheese will furnish as much as 1,900 calories a pound. When compared with other foods, cheese yields a lesser number of calories to the pound than some of the grain products, but considerably more than lean beef, fish, etc. Cheese must necessarily be considered an important food in the diet from any one of the factors considered. It would, however, be of greater value in special cases, for instance, in growing children who are in great need of calcium, phosphorus and the growth-promoting vitamine A. Cheese is especially rich in all of these factors, and the intelligent mother should see that her growing boys and girls have at least one ounce of cheese a day, either in the raw form or, better still, combined with vegetables in a salad.



Post-Graduate Courses in London.—At a meeting of the Fellowship of Medicine held on Friday, April 13, at the Royal Society of Medicine, a scheme, brought forward by the non-undergraduate hospitals in London, was considered and it was decided to accept the scheme and take immediate steps to put it into operation. The scheme is devised to meet the needs of two distinct classes of post-graduate students, namely, those requiring short general refresher courses and those requiring advanced courses in the special departments of medicine and surgery. It is proposed to arrange the short refresher courses on the group system, centered in a general non-undergraduate hospital affiliated with certain special hospitals in its neighborhood and that each group should be responsible for three or four such courses during the year. It is hoped that four or perhaps five of these groups will be founded in London. The program will be begun by a course at the Prince of Wales General Hospital, Tottenham, assisted by the special hospitals belonging to the North Eastern Group, from June 11 to June 23. Further details regarding this course and others to follow throughout the year will be published shortly. For graduates requiring more advanced instruction it is proposed that each of the special hospitals should undertake two or three courses during the year and in these it is hoped that specialists from the undergraduate hospitals will be willing to come to the special hospitals on the invitation of the staff and assist in lectures and demonstrations.

France Honors U. S. Physicians.—January 3, 1923, Dr. Charles E. DeM. Sajous was made an officer of the Legion of Honor of France, and Drs. James M. Anders and Francis X. Dercum, Knights of the Order. This information will be deeply gratifying to the countless friends of these well-known medical men.

American Proctologic Society.—Following is the preliminary program of the twenty-fourth annual meeting of the American Proctologic Society, Los Angeles, Calif., to be held June 22 and 23, 1923. The meeting place and headquarters will be at the Hotel Alexandria:

Presidential Address, Dr. Emmet H. Terrell, Richmond, Va. A Plea for the Protection of Young Wives Against Venereal Disease, Dr.

Joseph M. Mathews, Seattle, Wash. Gastroenteroptosis: Treatment, Dr. William H. Axtell, Bellingham, Wash. Circular Amputation for Marked First and Second Degree Prolapse of Rectum (lantern slides), Dr. Frank C. Yeomans, New York, N. Y. Case Reports: Villous Tumor, Large Papillary Adenoma, Fistula (lantern slides), Dr. Harold E. Dunne, Washington, D. C. Pruritus of the Anus, Dr. Joseph F. Montague, New York, N. Y. Hydrochloric Acid in the Treatment of Rectal Affections, Dr. Granville S. Hanes, Louisville, Ky. The Ambulant Treatment of Ano-rectal Fistula, Dr. Arthur C. Crookall, Seattle, Wash. Ano-rectal Operations Under Local Anesthesia, Dr. Joseph F. Saphir, New York, N. Y. Case Reports: Lipoma of Buttock Resembling Female Breast with Nipple (photographs), Dr. Isaac L. Ohlman, Pittsburgh, Pa. Case Report: Tuberculosis of Anus and Rectum, Dr. William M. Beach, Pittsburgh, Pa. Cancer, Dr. J. Rawson Pennington, Chicago, Ill. The Location of Internal Hemorrhoids and Its Bearing on Treatment, Dr. Louis J. Hirschman, Detroit, Mich. Rectal Discomfort Due to Extra-Rectal Pathology, Dr. Alois B. Graham, Indianapolis, Ind.

In addition to the regular papers, at convenient times during the scientific and clinical sessions, there will be demonstration of instruments and operative technic and discussion of several important proctologic subjects as requested by certain Fellows.

American Drug Manufacturers Meet.—The twelfth annual meeting of the American Drug Manufacturers' Association was held in New York City, April 16-19. Important matters relating to narcotic regulations, legislation, pharmaceutical progress, scientific research, medicinal chemicals and other subjects were discussed in the various sections.

A most successful meeting was closed with a banquet on April 19, at which the Hon. Royal S. Copeland, newly elected Senator from New York State, and the Hon. James A. Reed, Senator from Missouri, were guests of honor.

The officers elected for the ensuing year are: President, A. S. Burdick, president of The Abbott Laboratories, Chicago; first vice-president, S. B. Penick, president of S. B. Penick & Co., New York; second vice-president, Willard Ohliger, president of Frederick Stearns & Co., Detroit; third vice-president, Ralph R. Patch, vice-president of E. L. Patch & Co., Boston; secretary, A. Homer Smith, of Washington, D. C.; treasurer, Franklin Black, secretary of Charles Pfizer & Co., New York.

Diphtheria in City and Country.—In New England, at least, the susceptibility to diphtheria is higher among persons living in sparsely settled or rural regions than it is among those living in cities; and it is much higher among the well-to-do than among the

poor, and among the native born than among the foreign born. Such are the conclusions reached by Dr. C. W. Kidder, of the U. S. Public Health Service, after an investigation, recently completed, in the Eighth Sanitary District of Vermont, which has a population of 35,000.

The Schick test was administered to a little more than 2,000 teachers and school children whose parents requested it. Of these, about 1,500 were found to be susceptible to the disease; and their immunization with toxin-antitoxin was at once begun.

The Schick test is made by injecting a tiny amount of diluted diphtheria toxin beneath the outer skin layer of the forearm. If the person is immune to diphtheria, that is to say, if his blood contains substances that neutralize the toxin that is injected, nothing results. But if his blood does not contain such substances a small rosy spot soon appears at the point of injection and persists for a few days. It causes little or no discomfort.

The value of the Schick test lies in its pointing out those who are susceptible to the disease and in thus enabling them to be immunized by toxin-antitoxin before an epidemic breaks out. It also enables those who are not susceptible (estimated as being from 20 to 30 per cent. of children and 35 to 50 per cent. of adults) to save the expense of immunization either before or during an epidemic. This is the second great step in the fight against diphtheria, the first being the introduction of diphtheria antitoxin, which came into general use about the beginning of the century and which caused the diphtheria death rate to drop from 43.3 per hundred thousand of the population in 1900 to 15.3 per hundred thousand in 1920, the latest year for which figures are available.

Notwithstanding the distances to be covered and the relatively high cost and difficulties of such work in rural districts, the value of the Schick test and of the toxin-antitoxin immunization, adds the Public Health Service, is so great that it should be included at all appropriate times in the programs of health departments. Particularly should this be done in rural regions, where the degree of susceptibility to the disease is greatest and where facilities for prompt and adequate treatment are most frequently lacking.

Growth of Heart and Blood-Vessel Diseases.—The rôle of diseases of the heart and blood-vessels in the declination of applicants for life insurance and in the mortality of accepted risks is discussed by the New England Mutual. It reports a study of statistics of the company which reveals the surprising fact that in a total of 18,897 declinations, 9,900, or 52.4 per cent., were due to abnormalities of circulation. Moreover, out of a total of 32,870 deaths, 10,690, or 32.5 per cent., were caused by cardiovascular disease.

American Medicine

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Blood-Pressure.—The symposium on blood-pressure appearing in this issue of AMERICAN MEDICINE constitutes a valuable compendium of present-day knowledge concerning this important phase of medicine. There is little appreciation among those who daily are making routine tests for blood-pressure, of the international combination of investigation, research, invention, and clinical study that has given blood dynamics a practical value in the study of human infirmities.

Three full centuries have been involved in the development of our growing knowledge of the circulation of the blood. The contributions of scientists from England, Germany, France, and Italy served as the solidifying foundation of modern methodology.

Obviously, the first great step was the epochal contribution of William Harvey, as summed up in "De Motu Cordis," in 1628. In this celebrated seventeenth century pamphlet was clearly enunciated the principle that the heart functions as a muscular force pump, driving the blood thruout the body—and a new era dawned in physiology, anatomy, and pathology.

One hundred and five years later Stephen Hales, an English clergyman, made a practical leap forward by measuring the pressure in an artery of a mare, by connecting it with a goose quill—some state that it was a glass tube—and noting the height to which the blood rose, when the tube was held vertically. This he described

in 1733, in an article, entitled "Hemodynamics," appearing in his volume "Statrical Essays." This was the outstanding contribution of the eighteenth century and may be regarded as the basic contribution to the modern study of blood-pressure.

The nineteenth century built upon the English foundation, when Jean-Leonard-Marie-Poiseuille, of Paris, in 1828, made use of a mercury manometer, completed his hemodynameter, and ascertained that blood-pressure rises and falls with expiration and inspiration. It was not, however, until Carl Ludwig, the founder of the Physiological Institute at Leipsic, and one of the most celebrated teachers of physiology that has lived, developed the graphic method of studying blood-pressure. He constructed a recording manometer, with a moving drum, that constitutes the kymograph. To Ludwig, probably more than to anyone else since the days of Harvey, do we owe our extensive knowledge concerning the circulation of the blood.

Following the introduction of Ludwig's graphic method, the literature of the subject began to evidence the results of numerous researches, most notable among which may be mentioned Alfred Wilhelm Volkmann's (1850) "Die Haemodynamik nach Versuchen."

Improvements in the mechanics of instruments were provided by Hürthle, who made a membrane manometer for determining systolic and diastolic pressures. In 1876 V. Basch, of Vienna, described the

sphygmomanometer, practically in the form that is used today. In 1889, Potain modified the earlier instruments by replacing the water-pressure by air-pressure. In 1896 Riva-Rocci, and in 1897, Hill, independently described modifications in technic, which involved the application of an arm-encircling rubber bag or tube that was to be inflated by bulb or pump.

Since these dates there has been no practical modification or alteration of the principles involved in the determining of blood-pressure. There have been numerous deviations in the form and size of apparatus, leading to greater or less accuracy, simplicity, and practicability, and thus have arisen the various blood-pressure apparatuses, sponsored by Von Recklinghausen, Stanton, Erlanger, and others. Thus one notes that almost three hundred years were required for the evolution of the science of hemadynamics to a state of adequacy and practical efficiency, warranting its service thruout the world of clinicians.

The various elements that enter into the maintenance and regulation of blood-pressure comprise all the elements of the circulatory system. The heart, arteries, capillaries, veins, the blood itself, and the lymph are interworking factors to be considered in the interpretation of the meaning of a high and low blood-pressure. The relations of systolic and diastolic pressures, arterial pressure, and capillary pressure have received patient study and investigation, but even at this time there is not complete unanimity as to the meaning, cause, and effects of deviations from the thus far established norms.

Scientific growth is of the century plant variety. The blossoms are few, tho the growth is continuous. The progress in the study of the circulation of the blood has been rapid, considering the comparatively few

years that have elapsed since the discovery of circulation. With the improvement of instruments and the increase in the volume of experimentation and a larger accumulation of clinical data, it is readily believed that the future of hemadynamics is assured. This branch of medicine provides a valuable and useful instrument for advancing the health of man. It serves to give a fund of knowledge that will lead to most helpful living during the years of industrial activity. Thru this science, perhaps, is to be secured the solution of the problem of the increased mortality between the ages of forty-five and seventy years. Is it the greatest significant element to grapple with the terrorism of invalidism in old age and premature or postponable death? The answer is for the future to tell, tho the numerous articles by capable authorities attempt to forecast it.

The Use of Radio.—The tremendous development of radiophonic science has produced a most significant, practical contribution to human comfort. The evolution of receiving sets and the continued tendency towards simplicity and the consequent reduction in costs have provided the present generation with an instrument for pleasure that tends to revolutionize much of education. The possibilities which this tapping the sounds of space offers are at present beyond conjecture. Experimentation may still be regarded as in its infancy.

In the growing conquest of his environment, man has grappled with the sea and the land and their forces and resources. Today the vastnesses of the circumambient space are being traversed by intrepid scientific explorers. The marvelous achievements of aviators in attaining almost unbelievable speed are calling forth our ad-

miration, as portents of a future method of transient that will bring together more closely distant lands.

The conquest of the air by the human voice links together distant peoples. The radio is another factor in overcoming time and space and should become powerful in uniting in harmonious thought and reflection millions who are never to meet. The remarkable power of the public press is being challenged by a new instrument that, with the reduced cost of production, may reach an audience of millions—more than are reachable today by the consolidated press service of the nation.

Physicians may not be concerned with the possibilities of the radio for the transmission of popular news or for the dissemination of religious or secular opinions. They can but recognize this new instrument as a contribution to public welfare. It represents today the finest instrumentality for reaching the shut-ins of the world, save those who are deaf. It can bring a new interest in life to the aged, the crippled, the blind. With individual phones it may help the hospitals' convalescents to keep in touch with the cheer of the world, to listen to music and song, to harken to addresses upon all subjects that run the gamut of human ideas, from market reports, baseball scores, to post-prandial addresses, and the explanation of the Einstein theory of relativity.

With a loud speaker, wards of convalescents may be entertained and the entire atmosphere of institutional isolation may be altered in a stimulating manner to communal participants.

When one contemplates the possibilities of broadcasting public health information, one can only be amazed at the tremendous leverage upon public thought and opinion which may be exerted. The United States Public Health Service distributes its mes-

sages so as to serve practically every portion of the United States. The messages thus sent are translated into different tongues and supplied to the foreign language press in the United States and Europe.

The utilization of this machinery for disseminating knowledge concerning tuberculosis, the prevention of blindness, the care of infants and children, the protection of foods, the method of attacking any specific epidemic disease or communal pest transcends in importance most of the educational devices now available, and mainly because the cost of the operation is minimal.

The installation of a broadcasting plant is not costly. The up-keep is inexpensive, and the maintenance of lecturers is covered by the ordinary appropriations for health service. There are no printing, postage or individual expenses to get the message into the home, and one has a reasonable degree of certainty that the broadcasted information is at least heard by a definite proportion of the community. There is no certainty that printed material is read very widely.

The youth of the land is being reached, and it is by inculcating in them proper ideas and attitudes that the greater security for the future obtains.

The educational value of radiophony does not consist only of the health messages that may be transmitted, but in the general advantages that accrue from exchanging suitable information thruout the world. Here, at least, is a direct medium for reaching the home. The point of departure may be the editorial office, the pulpit, the theater, the lecture platform, the museum, the baseball field, the department store, or university hall. The audience may be of all ages, colors, creeds, conditions of servitude,

of varying moods and degree of contentment.

Life is flowing thru space, to be touched by those who would live. Thru boundless ether, mind touches mind, and action and reaction may be born. Solidarity may be sought or schisms requested. The striking element is that the human qualities and personalities are orated to an attentive world. Sad would be the prophet who would at this time and day venture to foretell the effect of this new form upon human welfare and contentment. Suffice to say that the radio has come and has conclusively shown that it is going to contribute to the betterment of the world.

Malaria Declines.—Malaria, as a disease, is not marked by a severe mortality rate. Its contribution to human misery is represented rather by the fact that at least two hundred persons are ill with the disease for each one who succumbs. The period of illness saps strength and energy, interferes with normal occupation and wage-earning power, and, with the possibilities of re-infection or exacerbation of uncured states, vitiates a considerable amount of available energy for familial care and industrial pursuit.

Economically, the presence of malaria is far more consequential than the mere infection of areas by the disseminating factor in the form of the Anopheles mosquito. The presence of the infected human being and the carrying mosquito may be of such a character as to interfere with the development of lands, create areas unfit for human habitation, and serve as an effective obstacle to normal communal progress and development.

The numerous efforts which have been

made for the suppression of malaria are bringing fruit thruout the world and it is most encouraging to note that there is a tendency to its continued decline in the United States. K. F. Maxcy, *Public Health Reports*, May 25, 1923, discusses "Malaria Distribution as Indicated by Mortality Records." His investigation involves the use of mortality figures in fifteen states, altho five of them are not yet included in the registration areas for deaths. His analysis, from the standpoint of accuracy, is to be regarded as approximating the facts, but is adequate for a general tentative judgment, considering that his figures are based upon the averages for at least the three years ending in nineteen hundred and twenty-one. The deaths are based upon county reports and thus there is made evident the inequality of malarial distribution within single states.

In the United States malaria is largely confined to the Costal Plain. In the East its extension is limited by the unfavorable topography of Piedmont and mountain regions. It attains its northern wide distribution far up in the valley of the Mississippi River. In the West its development is checked by the dry plains of western Oklahoma and Texas.

The widest extension of malaria, as marked in the frequency of mortality, is in the rural regions of the southern states, particularly in Arkansas, Louisiana, Florida, Mississippi, and South Carolina. Apparently, there are six times as many deaths in rural districts as in the cities of the states that have been studied. Even in the rural sections, however, there is far from a uniform distribution, and in some sections the malarial decline is more evident than in others. There is every indication that the northern boundary of "the malarial

“belt” has been retreating. The disease has practically disappeared from Maryland, within the past twenty years, and there are definite declines in such states as Indiana, Virginia, Florida, North and South Carolina, Kentucky, and California. The trends of the mortality rate are practically stationary or increased in Mississippi, Louisiana and Arkansas.

This recognition of the improvement that can be secured in overcoming mosquito-borne pestilence should serve as a stimulus to the state departments of health in the southern states to increase their appropriations for the purpose of reclaiming land from the control of the pestiferous mosquito. If funds are not available for irrigation, certainly the practical plan of encouraging the use of quinine as a prophylactic should go forward at a more rapid pace. Knowledge of the methods whereby malaria can be controlled challenges the efforts of those entrusted with the health and welfare of various sections of the country.

The sparse population of the rural districts makes land redemption a costly project in proportion to the number of persons living thereon, but, temporarily, free quinine distribution should meet the needs of these sections adequately.

The time is not far distant when malaria will be relegated to the category of historical diseases, whose violence and destructiveness have shaken nations and communities from activity and power into dulness and failure. The triumph over it is within sight of those now living, providing the anti-malarial campaigns are more freely organized and financed, with a definite purpose of wiping out a scourge. There is comfort in the thought that malaria is declining in incidence, but the real test of our modern methods of control lies in reducing the in-

cidence and mortality of malaria in those states and sections of states wherein its prevalence continues to lessen vitality and progress.

Dietetic Fads.—The readiness with which people of all types accept, without question, theories of living, is responsible for the existence of a large variety of cults. The old belief in medicine men, witchcraft, and necromancy has merely undergone a form of evolution, rather in harmony with the development of scientific principles. The seizure upon a single fact and its elaboration into a general principle, characterizes a large measure of the fads of the day, and particularly those relating to food.

Physicians, themselves, have not been totally immune to this tendency, as is readily evident in the history of the development of infant feeding. The numerous schools of high and low fats, proteins, and carbohydrates represent in part the acceptance of the idea of the preponderating influence of a single ingredient of milk upon the infantile organism.

Among the actual lay population one may point to the calorie counters, the sour milk devotees, the fruitarians, the vegetarians, the yeast swallowers, not to mention the apple-a-day enthusiasts, and the hot water imbibers. Each of these types of food fadists may point to a special literature that defends their activities, and to a still larger amount of propaganda material based upon distortions of facts, indicative of social fanaticism and religious zealotry. There is an effort made to rationalize the practices and to harmonize them with alleged scientific discoveries and esoteric doctrines.

The degree to which general health has been affected by following food fads cannot be estimated. There are no available data

to indicate the general influence of eating in accordance with the views of the exponents of special dietetic theories. There are frequently reports of particular disturbances that have arisen, as, for example, the development of typhoid fever, as the result of raw food feedings, or of diarrhea, as a result of attempting to secure a monopoly of yeast vitamines. And, indeed, there are many whose nervous exhaustion may be attributed to unwise, even tho accurate, counting of the calories.

There is sufficient bulk of general information concerning rational diet and dietetic therapy to enable people to make use of secure sound principles, if they desire it. It is strange, but true, that the faddists rarely seek for broad information, but their minds are so disposed as to be particularly receptive to any rules of living that appear to be different from those ordinarily accepted in the community.

One may properly inquire as to whether there is not an actual mental predisposition to faddism. There is a definite group in the community which takes up one fad after another, without reflection as to its meaning, value, or its own personal need. Among this group, food fads hold a position of considerable importance. Present-day opinion, in the light of modern science, favors a generally well-distributed dietary, including an abundance of milk and milk products, eggs, green vegetables, together with moderate amounts of meat, including fish, along with fats and carbohydrates of animal and vegetable origin. This opinion is ignored by the faddist feeder.

Since the biologic approach to dietetics has become popular and common, our knowledge concerning rational familial feeding has developed to a higher degree of exactness. There is little reason for the continuance of fallacious fads and food sub-

stitutions. A larger degree of education is indicated. The facts concerning food and diet may be properly disseminated thru public schools, women's clubs, as well as thru such health agencies, as the infant welfare stations, hospitals, and clinics.

Certainly, the presence of rickets and scurvy in early life, malnutrition during the pre-school age, and the susceptibility to disease during adolescence, owing to food deficiencies, demonstrate the need for more intelligent and intensified efforts to reach the general population with the truth concerning foods. It is probably an impossible task to attempt to eliminate faddism, but efforts should be directed to presenting educational material in such a manner as to protect children to a larger extent than exists. The adult faddists, as parents, constitute a serious problem in the management of the protective feeding of children.

Unfortunately, the medical profession has to compete with commercial exploitation of foods. The funds utilized to spread misinformation are not matched by money that will broadcast the printed truth. There is the widespread difficulty of overcoming objective salable commodities by a subjective transplantation of intangible ideas. If it were possible to make rational living the basis of an emotional religious life, there would be an unquestioning acceptance of the scientific verities which today are disregarded by thousands of seemingly intelligent people.

Disease and Crime.—The relation between disease and crime is emphasized by L. L. Stanley, (*Journal of the American Institute of Criminal Law and Criminology*, May, 1923). While the material of the testimony adduced fails to indicate the direct cause of the relationship, there is a definite

suggestion of the potentials of disease as affecting character and thus serving to provide a mental attitude essential for a career of crime.

While crime may be defined as any act subjecting the doer to legal punishment, it is patent that the consensus of communal opinion largely determines what acts are to be regarded as criminal in character. Thus, in part, it is obvious that the criminal act arises from a series of circumstances which determine the doer to disregard the conventional, legal, social, and moral opinions of the community. This does not raise the essential view as to whether criminal action is voluntary, or unknowing and unintentional. The fact that a crime has been committed carries with it a degree of punishment that varies according to the ideas of an adequate penalty existing in various states of the Union.

Stanley has been for ten years resident physician at San Quentin Prison, in California, a most excellent institution, widely recognized for its liberal policies; and it has been the custom at this penal institution to thoroly examine all prisoners shortly after their arrival. The examination is not a mere cursory affair, but involves a complete personal history, including habits, family tendencies, and past illnesses and accidents. In addition, a complete clinical examination, with the requisite laboratory tests, is made.

A study of a thousand such examinations, as tabulated, indicates that fifty-five per cent. of the crimes were committed by young men under thirty years of age, sixty-four per cent. of whom had never been married. A definite degree of biologic deterioration appeared to be present in one-sixth of all of the prisoners examined, one or more of whose kin were addicted to the excessive use of alcohol. Thirty-one per cent. of the

prisoners, however, confessed to their personal, more or less habitual, excessive use of spirituous liquors, and only twenty per cent. denied all use of it. Twenty-five per cent. of the group presented a history of tuberculosis in some member of their family.

It is noteworthy that while many crimes are committed by the mentally unbalanced, only four per cent. of the prisoners state that there was a history of insanity in the family.

Omitting the ordinary contagious diseases, which probably play a comparatively small part in determining crime, one notes that forty-four per cent. had had gonorrhea, and twelve per cent. had had syphilis. These percentages are not far above the ordinary norms for the general population, but, nevertheless, the results of both of these infections may have had a definite part in upsetting mental equilibrium, even tho they cannot be regarded as definite evidences of lowered mental states.

Considering the amount of stress placed upon drug addiction as related to a life of crime, it is interesting to note that at the beginning of nineteen thirteen only about three per cent. of the prisoners were drug addicts, tho during recent years this percentage has doubled.

It is significant that ten per cent. of the prisoners have impaired hearing, three and a half per cent. claim defective vision, eight per cent. had cardiac murmurs, six per cent. hernia, twelve per cent. were crippled, ninety-nine per cent. required dental attention, and fifty-three per cent. are afflicted with pyorrhea.

The Mental State of Criminals.—

Physical examination revealed a large variety of diseases, such as would be common to any group in the community, but

psychologic examination revealed the fact that twenty per cent. of the prisoners were to be regarded as feeble-minded. It is probable that the members of this mentally handicapped group were particularly susceptible to the distresses and irritations incident to their physical diseases and handicaps. It is readily understandable that their threshold of resistance is lowered, and, in consequence, the tendency to deviate from conventional rules and regulations is more pronounced.

Unfortunately, the tabulation does not present the percental presence of various physical handicaps at different ages. Nor is there evidence of the age at which the physical deficiency arose in comparison with the age at which crime was first undertaken. Nor is there any definite statement as to the occurrence of the crime during the period of acute suffering with any particular disease or malady, with the exception of the fact that feeble-mindedness may be regarded as continuous from birth. Even the question of feeble-mindedness requires expansion as to whether it is due to biologic inheritance or arises from non-hereditary factors. Under these circumstances, while the marshaling of physical defects and handicaps constitutes a valuable basis for judgment, it does not suffice to prove direct causative influences, even tho the mental effects of the physical conditions may have constituted various mental disorders that were conducive to lowered powers of inhibition.

It is probably true, "If all moral, mental, and physical disease could be eliminated, there would be no more crime." This statement, however, is not based upon the assumption that physical disease is a causative factor. Considering the prevalence of similar physical conditions in the general population, there is still need for acceptable proof of this assumption. The mere fact that

tuberculosis exists among the criminal population does not suffice to prove that it is responsible for violations of law. It is necessary, first, to demonstrate that the presence of tuberculous infections overcomes moral principles, lowers the threshold of voluntary control, and serves, in fact, to produce a type of mental derangement, as a result of which crime is committed. The fact that feeble-mindedness exists among criminals in a far larger proportion than it exists in the general population strongly suggests the part that this condition may play. Nevertheless, it may merely indicate the greater ease with which such types of criminals are apprehended.

It is difficult to assess the part that disease plays as a result of disturbing normal physiologic action, without any analytical study of the effects of surroundings and environment, in the absence of gross physical deficiency. It is frequently true that the causation of crime is fairly determined by the state of the body, but the degree to which this interrelation is of paramount importance still remains to be proven, in some manner other than that rising from the compilation of statistics concerning the physical status of criminals.

Birth Registration.—In 1920 the United States area for acceptable birth registration consisted of twenty-three States and the District of Columbia, comprising 59.8 per cent. of the population of the country. Particularly during the summer, when work with children reaches its peak, is there an appreciation of the importance of complete certification of birth. The responsibility for forwarding birth records to departments of vital statistics falls mainly upon physicians, save in those communities where midwives are most active.

Legally, the fact of existence is no proof of birth, insofar as certification is necessary. From the practical standpoint, therefore, birth registration is of more significance than the mere establishment of vital statistics, in that it constitutes a legal document, which may be of the highest importance to the person whose entrance into the world is recorded.

The possession of a properly made birth record, particularly if supplemented by a certificate of birth, indicating that the fact has been duly recorded, is a definite asset. Legally, the birth certificate may be helpful, not merely in determining citizenship and the rights of voting and of inheritance, but it is also helpful in matters of education, securing working papers, and establishing age of consent for marriage. It is also helpful in establishing descent, familial rights, liability to military service, or to pensions for years of service, where an age qualification is involved.

It is not difficult for an individual to prove the date of his birth, if one or both of his parents happen to be living, but in the event of their death, before the need for proof arises, a serious legal situation may arise—and needlessly.

State and city departments of health, in their endeavors to establish a complete infant welfare service, for the purpose of reducing infant mortality and decreasing morbidity during infancy, are seriously hampered thru failure of physicians to comply with the laws. The actual amount of time required to fill out the record blank is so short that pressure of work scarcely serves as an excuse for failure to record births. The habit of some physicians to send in vital notice of births for record once a month or once a year is not to be regarded as full compliance with regulations, even tho this may be more satisfactory than complete

omission of making the required returns.

Inasmuch as licensure bestows the right to practice medicine in conformity with law, there is a definite obligation resting upon physicians, over and above a sense of duty to those whom they serve. Furthermore, the service to the family constitutes also a service to the state, and dereliction in duty may carry with it a double penalty, to the chagrin of the physician.

Insofar as only half of the states in the Union belong to the birth registration area, it is proper to emphasize the part that physicians' carelessness, indifference, or neglect have played in negativing a birth registration area, only limited by the confines of the country. This would appear to be a subject meriting some degree of organized propaganda on the part of state medical societies, in order to bring about a higher degree of satisfactory registration of births.

While in many states the physician receives a small fee for each birth reported, the responsibility of making the return is not determined by the willingness to accept it or a lack of interest in the fee nor reporting.

Birth registration constitutes an essential part of obstetric practice and should be emphasized in medical teaching, as one of the steps necessary to the complete obstetrical service to families. It is of more value than any procedure except washing the eyes with a solution of silver and properly ligating the umbilical cord.

Cooperative Medicine.—Opposition to the socialization of medicine under state auspices finds partial answer in the effort of some small communities to assume responsibility for their own medical needs.

A number of projects have been undertaken in different sections of the country to meet the health needs of small communities that have difficulty in retaining the voluntary services of a physician.

Numerous types of medical services have been instigated by churches, unions of industrial workers, lodges and industrial plants. There also have been attempted cooperative organizations based upon the idea of communal responsibility for its own health needs. In this class, for example, is the organization known as the Manhattan Health Society, which seeks to build up, thru a volunteer group of contributing members, an efficient self-providing organization to secure the major advantages of preventive medicine and nursing at its own expense.

In *The Survey*, April 15, 1923, F. B. Ross describes an experimental organization in Sharon, Kan. This community is a village of three hundred and twenty-five inhabitants, located eleven miles from the nearest town. In 1917 a young physician had settled there, but because of the limited population his practice was not sufficiently lucrative and he moved away, leaving the community without a resident physician for almost three years. To meet this unpleasant situation, the last incumbent, Dr. E. S. Hawath, was invited to return on the basis of a plan which involved a regular salary, guaranteed by an organization known as the Sharon Health Association. Membership in this organization is composed of both families and individuals. The physician is provided with an office, telephone, light, fuel and paid a salary of three thousand dollars annually, which is raised by assessing each member an equal amount. With the membership of three hundred, the annual dues would be but ten dollars. The plan provides that members are to receive

the services of the physician without any additional charge, except in major cases, such as require hospital attention and childbirth, when an additional fee of ten dollars is paid into the association to create a maintenance fund. The members of the association pay for their own drugs and surgical dressings.

Members who fail to pay their dues are dropped from the society and can only be reinstated upon payment of their dues, after a favoring vote of the directors. The directors also have the determining voice as to whether a person ill at the time of application may join the association.

The time and strength of the physician is somewhat protected, in addition, by provisions that the physician is entitled to a dollar a mile or fraction thereof, beyond a six-mile limit, for his calls. Night calls between the hours of ten P. M. and five A. M. are to receive an additional cash fee of one-half the customary fee fixed by the Kansas Medical Association, which is to be paid directly to the physician. The doctor is not restrained from outside medical practice that does not interfere with the welfare of the organization and all fees from such activities become a part of his individual income. A number of similar provisions exist to enable the physician to secure a larger income than that guaranteed by the association.

It is patent that at a comparatively small yearly cost *per capita* medical service is made available for the residents of the progressive village of Sharon. Their medical officer has little trouble in the matter of collections and, in consequence, is more able to give his patients a full measure of attention to the strictly medical work in his community.

The most significant feature of this voluntary association plan, however, consists

in shifting the responsibility for health to the individuals comprising the association, who are paying for health protection. Obviously, this tends to build up a larger interest in personal health and increases enthusiasm for raising the health standards of the entire community. Economic reverses do not interfere with adequate medical treatment and altho the annual assessment for services is low, the physician becomes a well-paid official, charged with a high degree of responsibility for maintaining the health standards of the association that employs him. It is readily understood that the possibilities for a health association of this character to build up the machinery for better personal care during illness are exceedingly great.

The provision of hospital care, necessary laboratory facilities, including X-ray, will soon come to be regarded as essential, and the community, in time, will undoubtedly possess for itself the equipment that will go far to improving the standards of medical service it desires. The greatest advantage of this type of organization lies in the field of preventive medicine. There will be ample opportunity for the periodic health examination of every member, and the giving of familial advice thru the medium of conferences that will tend to educate the community in the art of living.

Some objections undoubtedly will be made to this type of medical association, on the grounds that it represents a form of contract practice. It, however, in the last analysis, is no more undesirable than the contractual relations which are sometimes assumed by wealthy persons and their family physicians, wherein an annual retainer is paid to the family physician for all the medical service that may be required during

the year.

The mere fact that the annual payment per individual is small does not alter the fact that the physician is employed to give services to families at a definite yearly cost per member. He is not retained, however, by the individual member, but by the entire association and, as such, assuredly comes within the category of a community health officer. His services are procured by a voluntary group within the community, who desire the certainty of continuous health protection under circumstances which are peculiar because of the smallness of the community and its comparative isolation from larger centers where physicians are numerous.

Despite numerous shortcomings, this form of health organization represents a distinct step forward in medical organization, and redounds to the credit of the understanding citizens of Sharon. Undoubtedly there will be many more experiments of this character, the progress of which will be watched with interest, with a view to determining to what extent it may later prevail in meeting the medical needs of rural communities and small non-industrial populations.

Science versus Nature.

Methuselah ate what he found on his plate
And never, as people do now,
Did he note the amount of the calorie
count—

He ate it because it was chow.
He wasn't disturbed, as at dinner he sat
Destroying a roast or a pie,
To think it was lacking in granular fat
Or a couple of vitamins shy.
He cheerfully chewed every species of food,
Untroubled by worries or fears
Lest his health might be hurt by some fancy
dessert,
And he lived over nine hundred years!
—*Prescriber.*

MEN AND THINGS

The Use of Insulin.—Since the recent introduction of insulin in the treatment of diabetes press notices have carried extravagant reports, which would lead those suffering from the disease to infer that diabetes is no longer a problem. In view of the facts, however, E. P. Joslin, *Journal of the American Medical Association* (June 2), wisely states: "It is a mercy that at present insulin becomes inert, when given by mouth, and that its use is restricted to a syringe."

The successful treatment of diabetes still depends upon the utilization of a diet that will keep the urine sugar-free, even tho insulin is of the utmost importance. This new drug, that Banting has presented, does not cure diabetes, nor does it allow a diabetic individual to eat anything and everything that his palate craves or dictates. There is a definite interaction between diet and drug and if the diet much overbalances the effect of the drug, glycosuria will be present. If the drug overbalances the diet there is likely to be a definite reaction that may be fatal, but fortunately offers warning symptoms, such as nervousness, extreme hunger, sweating and tremor. Unless some sugar, as the juice of an orange, or from one to three teaspoonfuls of sugar are administered, unconsciousness may result and possibly death.

It is important, therefore, that general practitioners appreciate the continued necessity for care in the feeding of diabetics and make their patients fully conversant with their anti-diabetic dietary as well as with the method of testing the urine for sugar. These urine tests should be made before and after meals so that there may be information concerning the relation between the carbohydrates and the insulin. "If glycosuria is present and yet the patient is receiving sufficient calories, carbohydrate is reduced until all specimens thruout the day are sugar-free; or, if the carbohydrate is below

thirty grams in the diet, insulin may be increased." Only after a few weeks of preliminary treatment may "single specimen" days be depended upon.

The initial diet of a diabetic patient with glycosuria should approximate that which he has followed, with these modifications: "The calories should be reduced by a marked restriction in fat, and the protein limited to one gram or less per kilogram of body weight; and it is desirable to begin with about two hundred grams of carbohydrate, or as much below that quantity as was in the patient's former diet or, if that was unknown, with an equivalent of the grams of sugar in the urine."

The first dose of insulin should be one unit. Before the second meal two units are given, three before the third meal, and so on up to five units, which quantity is given three times a day and increased or decreased as necessary. During this period the diet also is being changed. Once the patient is sugar-free, effort should be made to get rid of the noon dose of insulin by shifting the carbohydrate to breakfast and supper and decreasing the noon insulin by a unit each day. The insulin may be given one-quarter hour to one-half hour before meals, depending upon the rapidity of absorption of carbohydrate in the stomach and insulin from the subcutaneous tissue, as estimated after observation of each individual patient.

Insulin may be discontinued in only a small fraction of cases. Thus it is apparent that the diabetic diet and insulin constitute a combined method of treatment, in which each possesses definite value, and the omission of attention to the details relating to either of them is fraught with definite danger. Fortunately, the Insulin Committee of Toronto has limited the supply and distribution of the drug in order that there may be no exploitation of useless preparations or dangerous methods of utilizing it

by individuals unfamiliar with its nature and physiologic action. This conservative method of introducing the drug is of pronounced advantage, tho the hope arises that it will be soon freely available, with adequate directions for its employment. In the meantime it is necessary to secure the fullest data regarding its serviceability as well as the variations which are indicated for its administration in diabetes, with all its types of complications. The most essential truth, however, is that insulin is not to be deemed curative, but at present belongs to the category of medicaments that makes the life of a diabetic endurable and yields him capacity for prolonged life and service.

Intestinal Toxemia and High Blood-Pressure.

The belief is fairly current, indeed widely held, that high blood-pressure, one of the diseases of civilization, which is both prevalent and increasing, is largely of toxic origin. Dr. N. Mutch has more than once stated his views to this effect. Dr. Batty Shaw wrote on the subject in the *Lancet*, December 24, 1921, and urged that the symptom-complex which accompanied or followed hyperpiesia, the name given to high blood-pressure by Sir Clifford Allbutt, was not uremia, due to defective elimination by the kidney. Shaw insists that a toxic state of the blood is responsible or mainly responsible for the condition. It has been pointed out by Theodore Thompson in Price's "Practice of Medicine" that the hyperpiesia of Allbutt is frequently present without any evidence of renal lesions, and in such cases it is more than likely that repletion, the result of overeating and insufficient exercise, is one of the most important causes. It is also probable that circulating poisons which result in contraction of the heart and arteries are important etiologic factors. Tobacco, lead poisoning and gout are often associated with this condition, and in many cases intoxication, due to imperfect gastrointestinal digestion and absorption of pressor substances, are factors in its production. It is pointed out that the isolation of adrenalin and its effects in raising the high blood-pressure has led to the discovery that in many cases of high blood-pressure and chronic renal disease the suprarenal bodies are hypertrophied, and it has been suggested that this hyperplasia of

the suprarens may have some influence in the production of cardiovascular hypertrophy. There is little doubt, however, that the condition is very constantly associated with nephritis, in which the blood-pressure is raised and if the nephritis becomes chronic, cardiovascular hypertrophy results. While defective elimination by the kidney may not be the originating cause, the kidney is affected by the toxins and is involved in the poisoning of the system. In a leading article which appeared in the *Medical Press and Circular*, May 2 last, on the relationship between intestinal toxemia and high blood-pressure, attention was directed to the volume of opinion that has arisen recently in favor of an intestinal origin of the train of the so-called "uremic" symptoms including the hyperpiesia which is the starting point of further troubles. The modern conception of the bowel is that, apart from ingested poisons, it is a tube filled with the heterogeneous products of a chemical and bacterial digestion, many of them of a highly toxic nature, and kept under control by the natural defence of a healthy intestinal wall and its secreted mucus. The absorption of toxins from the bowel does not occur when the natural defenses of the body are in a condition to successfully resist attack; for example, when the internal secretions are working smoothly and when the scavenger of the body, the liver, is performing its rôle in its normal way. Absorption of poisons by the blood stream only takes place when the defense is weak at certain points, as in intestinal stasis when the mucous surface of the bowel is inflamed or abraded. Sir Arbuthnot Lane has been the chief exponent of the harm done by intestinal poisons when absorbed in excess of the destructive capabilities of the body to cope with them. Ailments and diseases of so varying a nature as uremia, osteoarthritis, migraine, neuritis, asthma, cardialgia, nephritis, tachycardia and certain forms of epilepsy and insanity are among the abnormal states of health attributed to this source. As for the association of high blood-pressure with toxins, testimony is both abundant and authoritative and it does not infrequently happen that the bowel becomes a cesspool whence poisons are disseminated throughout the system and the circulation is involved to a greater or lesser extent. Both American and Brit-

ish authorities are agreed on these points, altho perhaps the ill effects of chronic intestinal toxemia are more generally recognized or believed in in Great Britain than in America. In short, high blood-pressure is now largely credited to a toxic origin and chronic intestinal toxemia is regarded as a main factor in the causation of hyperpiesia.

High blood-pressure is, at least, one of the results of autointoxication and this is brought about in a large number of cases by eating and drinking too much and not taking sufficient exercise. Arterial hypertension and arteriosclerosis are progressive conditions which, if they cannot be cured, at any rate can be checked. Dieting, regulated exercise and careful living in every respect are essential features of treatment, but other therapeutic measures are indicated. The intestinal stasis should be relieved not by heroic treatment, but rather by aiding the impaired digestive organs and organs of elimination and excretion to do their duty in a normal manner, or as nearly so as possible. In this connection it is interesting to note that glandular therapy may play a part in bringing about this result, as when chronic intestinal toxemia is present the internal secretions concerned in the working of the alimentary tract are usually out of gear. First of all, then, the object must be to relieve the intestinal toxemia, and next to endeavor to destroy the injurious organisms in the bowel which have poisoned and are poisoning the blood stream and which are prominent factors, if not the main agents, in producing hyperpiesia. But altho it seems that the infected condition of the bowel is the source whence the mischief chiefly arises, it is plainly evident that the kidneys are often deeply involved and that a urinary disinfectant and kidney eliminant should also be administered. The aim is to find out the primary cause of the trouble and to try to uproot it. It must be confessed that both of these objects are difficult of achievement, often impossible, but it may be laid down as an axiom that as long as intestinal toxemia exists, even if it is not the origin of hyperpiesia, the condition will increase in intensity, and conversely that the relief of the intestinal toxemia and kidney toxemia, will also beneficially affect the state of the circulation. This is why, as said before, a

urinary disinfectant and kidney eliminant should be used. To sum up, therefore, it is evident that altho according to many authorities intestinal toxemia is a frequent cause of high blood-pressure, the endocrine glands are often involved. Consequently in many instances the judicious administration of glandular substances have seemed to exert a satisfactory action. It is encouraging to note that such great interest is being taken in blood-pressure from all points of view and that the matter is coming to be so much better understood.

The Question of Oral Sepsis.—For some time past a suspicion has existed in the minds of the members of the medical profession that oral sepsis as a cause of disease has been exaggerated and a revulsion against the wholesale extraction of teeth, which was lauded as a cure for each and every bodily ailment, has taken place. It is not now denied that a dirty mouth, and especially a condition of pyorrhea alveolaris, is highly prejudicial to health, and that such a mouth plays a part in the causation of a general toxemia, in fact, is a link in the chain making up the vicious circle, but it is strongly doubted that it is the origin of the toxemia, and by the extraction of teeth a cure can usually be effected.

The truth seems to be that oral sepsis as the *fons et origo* of most diseases has been overdone and that while it may give rise and certainly aggravates certain complaints, it is not in itself always responsible for the long list of bodily ills attributed to it. One of the latest authorities to enter a strong protest against the lust for teeth extraction is Dr. Llewellyn Jones Llewellyn of London, who writes on the subject a series of original articles in the *Medical Press and Circular* beginning with the issue of March 21, last. Dr. Llewellyn, who has largely made his reputation by his theoretical and practical knowledge of gout, arthritic and kindred affections, discusses in the article referred to, the relation of oral sepsis to arthritis. He commences by expressing the opinion that the mission of dentistry is to save and not to destroy the teeth and he goes on to say that he views with disquietude the off-hand way in which some physicians urge, and some dentists, as he thinks, too readily acquiesce in ruthless

extraction of the teeth. With regard to the treatment of arthritis from the standpoint of focal infection, he classes physicians as "indifferentists," who will have none of it, care nothing for etiology, pin their faith to salicylate of soda, and leave cripples for others to heal. The "fetichists," the lovers of strange gods, the radicals who ruthlessly extract teeth, remove tonsils, excise the appendix, cut out the gall-bladder and in the lust for sterilization would fain eviscerate, begin with certainties, end in doubt; act in haste, repent in leisure, and so their victims. Lastly, the "eclectists or conservatives," who, to the writer's mind, have chosen the better part. These begin in doubt and end in certainties. Their aim is a right judgment in all things. Right carefully they search for foci, but when found are not obsessed, do not forget the host's susceptibility and resistance to infection, seek adequate proof of systemic infection before they remove what cannot be replaced, but when satisfied remove teeth or tonsils, or both, if needful. Dr. Llewellyn points out that in the alternate these conservative practitioners reap as many successes as the focal enthusiasts and sustain fewer humiliations. Last, but not least, they do not, unnecessary and unwarranted mutilations, bring into ill-deserved repute a sound method of therapy. From the recognition that local infective foci are wholly or in part responsible for certain types of arthritis is, in his opinion, the most signal advance achieved in regard to this deplorable affection.

The Relation Between Oral Sepsis and Arthritis.—The remainder of Dr. Llewellyn's article is taken up with a lengthy and discriminating analysis of the entire question of the relation between oral sepsis and arthritis, and interesting as it is, cannot be discussed as it deserves to be discussed within the scope of an editorial. However, there are one or two points to which it is worth while to draw attention. Rosenow's findings, for instance, suggest that a large number of acute and chronic forms of arthritis are referable to a group of cocci isolated by him. He affirms that these streptococci, tho ordinarily non-pathogenic, may, under certain conditions, *viz.*, if located in deep tonsillar crypts, decayed teeth, etc., develop

pathogenicity, and from these foci affect the joints. But there are numerous distinguished pathologists and clinicians who have failed to confirm either the laboratory findings of Rosenow, after showing that in any given case of arthritis over etiologic diagnosis of dental foci is not absolute, but only presumptive and retrospective. Llewellyn points out that from the therapeutic standpoint the types of arthritis attributable to dental foci are divisible into three classes: 1. Suitable, *viz.*, those that respond favorably to medical or conservative treatment of the infective foci. 2. Unsuitable, *viz.*, those that fail to respond thereto. 3. Those that undergo arrest on cure, demonstrable foci persist on are untreated. Thus Llewellyn not only doubts the wisdom of attributing to oral sepsis all cases of arthritis, for there may be and probably are other foci of infection, but he classifies the types of arthritis attributable to dental foci and, of course, he deprecates routine treatment by extraction of teeth or removal of tonsils. Cases must be treated on their merit and the personal equation always considered.

He also earnestly protests against making a dental film the final court of appeal. If we do so we shall literally "fall from grace," for, as Stengel has cynically observed, "The X-ray plate is like the photographic plate, it can lie outrageously if the picture happens to be taken in certain directions." The X-ray has its decided limitations. Dental films, then, in their relation to solving the problem of the teeth and their etiologic connection with arthritis should be regarded with some skepticism. Llewellyn's article in short, is brim full of common sense and is a rational discussion of a prevailing fad.

The Problem of Preventive Medicine.—This problem is discussed by Samuel R. Haythorn in the March 31, 1923, issue of the *American Medical Association* under two general headings: (1) influences that are developing an ever-increasing demand for disease prevention in the practice of medicine, and (2) preventive medicine in the medical curriculum. Haythorn urges that the teaching courses in all departments be reviewed thoroly, with the object of stressing successful preventive methods for the benefit of the students. The teaching

should be carried out with a view to informing the student of the best preventive measures available, and should be directed toward preparing him for leadership in progressive health movements. If the public is convinced that the physician and student are doing everything within their power to decrease sickness and prolong life, there is no danger that it will not continue to extend to them the protection and support they have always enjoyed.

Americans Among Greatest of the Meat Eaters.—The United States, with only one-sixteenth of the world's population, has one-sixth of the world's livestock, says the United States Department of Agriculture. It has one-half of the world's 9,000,000 mules, one-third of the 169,000,000 swine, one-fifth of the 100,000,000 horses, one-seventh of the 492,000,000 cattle and one-ninth of the 465,000,000 sheep. As consumers of meat per capita, we stand fourth in the list, with an average of 142 pounds a person a year. We are exceeded by Argentina, with an annual consumption a person of 281 pounds; Australia, with 263 pounds, and New Zealand, with 213 pounds. Canada follows us closely, with 137 pounds, and the United Kingdom with 120.

This notable issue of American Medicine with its contributions from so many of the foremost physicians in America and England, furnishes concrete evidence of the character and quality of modern scientific medicine that needs little comment. A study of the articles presented not only shows how far we have come since the day of Stephen Hales, in our knowledge of the dynamics of the circulation, but in our grasp of the physiologic rôle of the blood-pressure in maintaining normal conditions in the human organism. It is gratifying, moreover, to note the progress that has been made by medical men of scientific education and training in their ability to interpret variations in the blood-pressure. If there is any one line of research more than another, that emphasizes the onward march of medicine toward the goal of accuracy and exactness, it is that which has been devoted to the study and investigation of the heart,

kidneys and circulation in general during the past two decades. The success of trained and educated practitioners of medicine, moreover, in coping with cardiac and renal affections unquestionably shows the line of demarcation between scientific and quack medicine more clearly and definitely than any other service being rendered to afflicted humanity today.

AMERICAN MEDICINE is proud of the exceptional character of the articles appearing in this issue, not alone because of the advance they indicate in practical medicine, but also in the capacity they show of the medical profession to meet and overcome the difficulties presented by the problem of high blood-pressure. We doubt if there has ever been a group of articles, on a single medical subject, that has contributed more definitely and completely to the solution of an important medical problem or that has held greater promise of substantial and far-reaching benefit to humanity.

In presenting this special issue to the medical profession the Editors of AMERICAN MEDICINE wish to take this opportunity of thanking every physician, therefore, who has contributed to its scientific worth and success, and has thereby rendered so signal a service to modern medicine.

Particularly are we pleased and grateful to include the noteworthy papers by our colleagues of England and Canada, since they not only help so materially to broaden the scope of the study and consideration of the subject, but point so definitely to the close and intimate relations that exist today between the medical men of English-speaking countries.

Errata.—In the last section of Dr. A. J. Quimby's paper in our May issue, the last sentence reads as follows:

"The normal needs approximate about one ounce of metallic iodine each year added to the resources derived from food and water."

This statement should have read as follows:

"The normal needs approximate about one dram of metallic iodine each year added to the resources derived from food and water."



ON HIGH BLOOD-PRESSES.

BY

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land.

In current writing on the arterial system and its disorders some confusion still remains between "arteriosclerosis" and high blood-pressure. Let us try then to clear up any such confusion, if possible. Passing unwillingly by the remarkable original observations on arterial and venous pressures by Stephen Hales, observations of great variety, rare accuracy of method, and precise quantitative appreciations, we may pass on to von Basch, of Vienna and Marienbad, as the pioneer in the clinical study. Von Basch attributed the abnormal increments of pressure to arteriosclerosis which, in his opinion, by hampering the freedom of the circulation, raised the peripheral resistance and the proximal tension. This notion of the events still lurks in the minds of many physicians and their patients, and colors their language. "Mr. X. is suffering from arteriosclerosis" turns out to mean from high blood-pressure. In a recent important paper this use of "arteriosclerosis" to connote high pressure cases was very equivocal. Another writer speaks of "arteriosclerotic hypertension." The term "hypertension" is too narrow. The vessels on the hither side of the area of resistance are under strain,

no doubt, but this is a secondary condition consequential to the abnormal resistance. In the earlier stages of the malady the arteries may or may not have suffered injury. In the clever and lively writing of Huchard, who comes next in the story, the author pointed out that arteriosclerosis was not the cause but the effect of the high pressure; but he insisted that arteriosclerosis signified in all cases high arterial pressures, present or past. It fell to me to dissect this postulate of Huchard and to show that it was true for some fifty per cent. only of the cases of arteriosclerosis; and that in a very large number of cases, those which I called "decrecent," and again in certain chronic diseases, such as diabetes in children, for example, there was no evidence of high pressures at any stage; and furthermore, that the symptoms, the signs, and the course of degenerative sclerosis were wholly different from those of the high pressure series to which I then gave the name of hypopisia. Once more: certain observers, among whom I may especially mention Marchand, proved that in men who worked hard with their limbs atherosclerosis was apt to arise in these limbs. In 1906-9, while serving on a Home Office Departmental Committee, I had discovered this effect of labor, even in men under aet. 45, if engaged in the heavier kinds of town industry; and this result I afterwards verified among our agricultural laborers in the Eastern Coun-

ties. This local atherosclerosis is of little importance if we bear in mind that it is not to be taken as a sign or measure of a like deterioration of the inward arteries.

In cases of primary contracted kidney with large heart, I find that in persons under middle age—say between 30 and 40—the aorta may withstand very high pressures for years, say as many as six or more, without showing naked eye signs of damage; or no more than a moderate dilatation of the arch. I have been hoping for some time past to collect a series of such youngish aortas in high pressure cases and to prepare stained sections, but the war stopped the work, and the time now left to me is short.¹ We have to regret that, while in pathologic laboratories diseased hearts rarely escape microscopic investigation, aortas, even in angina pectoris, are but glanced at with the naked eye and, if not superficially diseased, cast aside. There is no evidence that consequential atherosclerosis reactively aggravates the pressures materially, tho of course it brings in collateral perils. I may add by the way that some observers pay far too much attention to small differences of degree, such as ten or even fifteen mm. Hg. Our external methods of appreciation are but approximate, and pressures fluctuate under transient influences, so that comparative experiments depending on small variations are worthless.

In a recent paper Bramwell and A. V. Hill² have shown that the velocity of the pulse wave gives a measure of the elasticity of the arteries according to the formula velocity (in meters per sec.) = 3.57 divided by square root, percentage increase in vol.

¹Hales made experiments on the distensibility and fatigue of arterial and venous coats, as Roy did 150 years later.

²Bramwell and A. V. Hill, Proc. Roy. Soc., B. Vol. 93, p. 298 (1922). See also later paper by Bramwell in Vol. 94.

per mm. Hg. increase of pressure.

The velocity increases as a function of the rise in pressure.

The method may prove to be of great value in clinical appreciation.

Of the causes of hyperpiesia we know nothing. By its rarity in hospital it seems to be a disease of the well-to-do class, especially perhaps in persons who eat largely, or whose fathers have indulged good appetites. A gouty history, often in the kins-folk rather than in the patient, is certainly frequent in hyperpiesia; tho in frank, gout arterial pressures need not be raised, and generally indeed are not. I believe there is no hyperglycemia in hyperpiesia; I know there is no excess of non-protein N. in the blood, nor default of it in the urine. The malady is rather more common in men than in women. Its subjects may be fat and ruddy, or spare and sallow. In the primary contracted kidney there is great hyperpiesis; but in hyperpiesia the kidneys are normal, or they present only insignificant defects.¹ The kidney of general atherosclerosis is another story. The secret of the malady may lie in the activity or permeability in capillary fields, under the influence of certain amine derivatives or otherwise. It is said, e. g., by Boas and Frant, that in hyperpiesia the capillary pressure is low, in renal hyperpiesis high; this suggests that in hyperpiesis the resistance is in the constricted arterioles. Alcohol, save as a part of a liberal table, has little or nothing to do with the causation. Nor does it appear that the endocrine balances have much concern with the disease; the adrenals seem to have been acquitted by the experts, and the normal basal metabolism seems also to acquit the thyroid. And it is high diastolic, not high

¹See H. Batty Shaw, "Hyperpiesia," London, 1922, and G. Evans, Goulstonian. Lect. on "Arteriosclerosis."

systolic pressure, alone that is the mark of hyperpiesia. Emotional causes affect systolic pressures only.

I have spoken of a well-fed ancestry because I feel sure that hyperpiesia is hereditary; the moderate man of today may suffer by his own excess, or for the luxurious living of his forefathers. The family proclivity to cerebral hemorrhage drew my attention to family blood-pressure. Among my early pathologic memories is one of a large family of neighbors and intimate friends, many members of which during three generations were in their sixth and seventh decades struck down by cerebral hemorrhage. They were big, robust, ruddy men, ardent sportsmen, who ended each day with a good dinner and a pint or two of port. We had no manometers in those days, or none that were not scoffed at; but I have felt as sure of the high blood-pressure of those folk as if I had measured them. In some families hyperpiesia seems to end more generally by the accident of cerebral hemorrhage; in others by cardiac defeat.

A faint cloud of albumin is apt to appear in the urine of hyperpietics of some duration; it need not signify renal disease, and is of no immediate importance. The renal capacities will, of course, be estimated. As the heart dilates and the kidneys become "cardiac," uremic symptoms, even of some severity, may set in; but if the general condition be relieved the uremia will pass off, and may thus recur and depart more than once.

In many cases the symptom which first brings the patient to the physician is dyspnea, as on walking uphill. A large dilated heart is revealed; the mischief is done; the patient may be helped and partially restored but he has entered upon the fifth act of his malady. It is remarkable how the pressures keep up even in extreme phases of

hypertension. A few days ago I had the opportunity, in a case of yielding heart, of watching the blood-pressure for some minutes during a phase of Cheyne-Stokes breathing; the systolic ranged about 220 mm. Hg. and the diastolic about 160 without much fluctuation. Bleeding to a pint of blood brought complete relief. This respiratory phase had lasted off and on for some days.

Concerning the treatment of hyperpiesia I have nothing fresh to say. So long as we have no notion of the causes of the malady a rational therapeutic is out of reach. Such catch phrases as "intestinal toxins," "kidney inadequacy," "endocrine disorder" and the like are but "dust in our eyes." I have never been able to detect in these cases any intestinal disorder other than accidental; nor do I find in the urine, or otherwise, any evidence of absorption of intestinal poisons; moreover, as a class, fecal poisons are vascular depressants. I have said that blood examinations in my own cases have revealed no accumulation of non-protein nitrogen in the blood, nor default of it in the urine; and that observers are now agreed that the adrenal bodies seem to be innocent of any part in the disorder. We are thrown back therefore upon empiric remedies, upon courses of calomel in fractional doses, upon the methods of certain spas, upon the high-frequency currents, upon diet and regimen. Venesection with withdrawal of xvi-xviii ounces is invaluable at crises; as, for instance, for a sense of fulness and oppression, insomnia, laboring heart, slighter or severer degrees of Cheyne-Stokes respiration and so forth; but a frequent resort to it becomes exhausting. In my experience in some families hyperpiesia ends more often by the accident of cerebral hemorrhage, in others by the defeat of that gallant viscus, the heart. In either case

profuse spontaneous hemorrhages, such as epistaxis or hemoptysis are apt to occur; and could we but foresee such events we might forestall them by a free blood-letting.

Hyperpistic patients are wont to take saline laxatives regularly, and perhaps to overdo them. Tho they do not immediately reduce pressure they are probably helpful in keeping the system clear of noxious elements; and whatever the mode of action, the virtues and methods and the rest of certain spas give effectual relief in this malady. Such patients should pay an annual visit to one of them. But even diet is disappointing; no doubt the patient must live simply and rather abstemiously, but to cut down meat severely or even to cut it out, seems to make little difference for good, if any, and may be carried too far. Nevertheless, in fat patients to reduce weight by cautious dietetics is essential. Graduated muscular exercise is very beneficial; bowls, golf, cycling and horse exercise are of course better than more violent efforts. If cardiac or cardiouremic symptoms appear the treatment will follow the usual course of such cases. There remain undescribed, as too numerous to mention here, the many little niceties and devices of treatment which each physician works out for himself in the course of experience, and which suggest themselves as proper to the individual patient.

The best "symptomatic" remedy is the

high-frequency current, and its effects persist for some time—longer and longer as the treatment continues. It is not easy, however, to find electricians who are interested in unpictorial records, or who can give the time and care to these cases that they require.

It is of the first importance to free the mind of the patient from thinking of his disease, from suspense and morbid apprehensions. Let him form good habits of diet and self-management and medicines; let him live as physiologic a life as his circumstances will permit; and, having made these rules automatic, try thus to dispel all thoughts of his ailments. For this reason the physician will not read the pressures more often than is quite necessary, and when necessary he will try to evade mention of the actual figures before the patient.

In its earlier periods, then, hyperpiesia can be dispersed; but so long as we lie in ignorance of its causes, so long as its springs run for years underground, so long preventive treatment will be baffled unless all persons over the age of five and forty submit themselves periodically for vascular tests. During the earlier stages, while the brain is being supplied abundantly with blood, many hyperpietics feel very well, work well, and working hard, live well, and perhaps such meticulous tests might beget, among sound and unsound, forebodings worse than the malady itself.



SUDDEN ABDOMINAL PAIN.

In all cases of sudden and acute pain in the abdomen, the possibility of a perforation of a gastric or duodenal ulcer should be carefully considered. If a diagnosis of this condition is made, operation should be done with the least possible delay. In the beginning and with proper treatment, acute perforation has a small mortality. When operation is delayed or omitted, perforation is a most serious and tragic condition.—Dr. A. H. Noehren (N. Y. Med. Jour.).

HIGH ARTERIAL BLOOD-PRESSURE; ITS NATURE, CAUSES, EFFECTS AND TREATMENT.

BY

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In my Toronto address on Medicine in 1906 on "The Circulation Viewed from the Periphery,"¹ I dealt very fully with the pressure and velocity of the blood in the arteries, arterioles, capillaries, venules and veins. As those observations are as true today as then, and not one of them has ever been refuted, I shall make use of a few in the much more limited scope of the present paper.

High blood-pressure is one of those fetishes which in the present day gives the medical profession and the public something to think about. By this generic term it is usually, I might almost say invariably, meant excessive pressure in the systemic arteries, forgetting that these are merely conduit pipes and not the only or even the most important part of the circulation so far as its ultimate objects are concerned. A knowledge of the circulation to be of much therapeutic value should embrace the whole circuit; however, on the present occasion we must confine our attention, as far as possible, within the limits set out.

It should be clearly recognized that the blood-pressure in the arteries is merely a part, tho' a very important part, of the energy imparted to the blood by the contraction of the ventricles. The energy of the blood in any part of the circuit is a compound of potential and kinetic energy, of lateral pressure and velocity, and the greater

the velocity in any part the less the lateral pressure. The same considerations apply to the pulmonic circuit, except that the energy is, as a rule, not more than a third of that in the systemic system. There is an important difference as to how the energy of the right ventricle is expressed in comparison with the left. I have calculated that while the pressure in the pulmonary artery is not a third, the velocity is at least three-fourths of that in the aorta. We will see later how this accounts for the relative freedom of the pulmonic circuit from degenerative changes. Unlike the vena cava the pressure in the pulmonic veins is practically always positive, so that the blood enters the left side of the heart under pressure, while it is usually sucked into the right side. There is a gradual fall of the pressure gradient from the right ventricle to the left auricle and, as the *vasomotor* nerve supply to the pulmonary vessels is extremely limited, there does not seem to be much resistance to the circulation, either in the arterioles or capillaries.

The advantage of high blood-pressure in many cases of renal disease was fully recognized by Sir William Osler, and it is very probable if he had lived a little longer his prestige would have caused this condition to be looked upon as a necessity of modern life and many might have felt as proud of their pressure as of their ancestral gout. On very different grounds, perhaps based on a lack of a clear perception of the advantage of a knowledge of physics, Sir James Mackenzie thinks that blood-pressure is a condition which scarcely merits any serious consideration, and he looks upon sphygmomanometers as more or less useless toys. Sir Clifford Allbutt takes a more reasonable and better balanced view, and has added a couple of words to our nomenclature. He designates high blood-pressure

¹ British Medical Journal, August 23, 1906.

as hyperpiesis and the conditions to which the pressure gives rise as hyperpiesia. These terms look well and are euphonic but I am not thoroly convinced as to the value of their use. The mental satisfaction thus engendered is apt to divert our attention from the underlying conditions. After all, high or low blood-pressure is merely a link in a long sequence, and the mere observation of a sequence, or of a part thereof, is no evidence as to the causes of the sequence. There was recently published in the *British Medical Journal* under the title, "Hyperpiesia," a case of a huge heart weighing 39 ounces; a syphilitic, atheromatous and calcareous aorta; pulmonary artery and branches dilated, and patches of atheroma; a fibrotic spleen; a nutmeg liver; kidneys, each 9 ounces with a certain amount of fibrosis, etc. This man had sufficient cause to depart this life, and his relatives should feel highly satisfied with the elegant death certificate.

Hypopiesis is now replacing the hybrid word, hypertension, so I suppose we ought to have hypopiesis to replace hypotension. Hypopiesia would look rather odd on a death certificate, yet in every case when the hour of departure came, hyperpiesis would be replaced by hypopiesis. In 1913 Dr. Albert Abrams drew a nice distinction between hyperpiesis and hypertension, much like stress and strain.

In every healthy individual there are very nice regulative mechanisms to control the conditions of acidosis and alkalosis, and the sugar content of the blood so that the variations take place within very narrow limits, but in the case of blood-pressure, a certain degree of which is essential to the maintenance of life, the variation has got a very wide range to meet the ever-varying demands of the system. What is a normal blood-pressure either for the individual or

the species has never been and never can be determined because the pressure must vary according to the calls of the system for more or less fresh blood. Without a certain diastolic pressure man could not assume and retain the erect posture. If you hang a rabbit by the ears after the sympathetic nervous system has been divided in the neck, it immediately dies because all the blood gravitates into the abdomen. Only for the resistance created to the outflow by the *vasomotor* nerves, man would have to go about on all fours, and owing to the enormous cooling surface he would become a cold-blooded animal—some think that he is often so already.

The Causes of Arterial Blood-Pressure.

The primary cause of arterial blood-pressure, high or low, depends on the force of the cardiac contraction and the amount of blood thrown into the circulation at each stroke—two variables within fairly wide limits. The pressure also depends on the depth of the liquid, hence in the erect posture the pressure in the tibial artery is much greater than in the radial raised above the head; it is therefore customary and advisable to take the arterial pressure at the level of the heart. In the healthy adult who is not subjected to much physical stress or strain, the systolic arterial pressure may range say from 100 to 150 mm. of mercury, while below 100 might be put down as subnormal, and over 150 as supranormal or hyperpiesis.

The object of the circulation is to convey nutritive material and oxygen to the tissues, and remove waste products, including carbonic acid, therefrom. While the heart starts the circulation, the maintenance of the pressure largely depends on the resistance to the outflow thru the arterioles and capillaries. A healthy heart has wonder-

fully adaptive capacity, so that its reserve force can be called upon at any time to do five or six times as much work as is required of it in ordinary quiet life. The greater the resistance or amount of work to be done, the greater the force of the cardiac contraction and the higher the lateral pressure within the arteries. If the resistance be too great the heart may not be able to cope with the work, and we get cardiac failure with subsequent abatement of the resistance, so that the heart again may be able to adapt itself to the lessened work. A long continued high pressure leads to hypertrophy of the heart with increase in the thickness of its walls, and perhaps in the capacity of its cavities, and this condition in turn maintains the arterial pressure at a high level.

As the blood leaves the heart its energy is largely kinetic and, therefore, during the systolic period there must be very little lateral pressure at the root of the aorta; but if that vessel be healthy and elastic the largest portion of this energy is rapidly stored up in its walls as potential, which is paid out during the diastolic period, and thus the blood is compressed with a force nearly equal to that which is transmitted and this force is applied to all parts of the aorta including its commencement; thus the blood is driven thru the coronary arteries during the diastolic period of the heart by the elastic contraction of the aorta—the diastolic pressure.

At the opening of the semilunar valves the blood has acquired its velocity head, and then the actual velocity depends on the energy or effective head minus the resistance to the outflow; in a large healthy vessel like the aorta the friction and viscosity of the blood are negligible quantities, but both come into play in the small arteries, and the mass of blood is an impediment to its forward movement, the greater the

elasticity of the vessel the greater the conservation of energy and hence the pressure and velocity become more or less uniform during the whole diastolic period. The velocity between any two points depends not on the pressure but on the difference in the pressures—the pressure-gradient. The most perfect circulation is one with a relatively small difference between the systolic and diastolic pressures—a moderately low systolic and a relatively high diastolic pressure in all the arteries. The systole of the ventricle gives out the energy during a third of a cardiac cycle, and the perfection of the circulation depends on the disposal of that energy, not only during the time that it is given out, but also in the interval between the systoles; the diastolic pressure should be more than sufficient to overcome all the resistance in the circulation, otherwise the blood in the main arteries would come to a standstill towards the end of the diastole. You can, therefore, look upon the difference between the systolic and diastolic pressures as that part of the energy which is not stored up in the walls of the arteries and which is used in producing velocity. I think when this difference ordinarily exceeds 40 mm. of mercury there is something wrong with the elasticity of the aorta, and it is about time to think about repairs; this difference between the systolic and diastolic or mean pressure is now-a-days called the pulse-pressure.

I know that the majority of heart specialists look upon a high pulse pressure as a most desirable thing, an evidence of a very efficient circulation, but I think that such an opinion evinces gross ignorance of the physics of the circulation; more of this anon.

A pressure-gradient of 5 mm. of mercury in a smooth-walled vein without any resistance gives a velocity of 1120 mm. in the

second, but in an artery in order to get this velocity you require a fall in the pressure-gradient from 150 to 100 mm. of mercury. With a pressure of 150 mm. and a resistance of 120 mm. of mercury to the outflow you get a velocity of 640 mm. in the second. This is the kind of circulation which would suit a Methuselah, as with such a pressure and velocity there is no excessive lateral or longitudinal straining of your vessels, and consequently the elasticity may be preserved till very advanced age. This ideal is not often realized.

The estimation of arterial blood-pressure with one of the numerous instruments on the market is a very simple matter, hence such instruments are in very common use, and many patients think that they have not been properly examined unless their blood-pressure has been recorded. Such random observations are of very little value; it is not the instrument, but the man behind the instrument who makes or mars the observation. I know an enterprising young physician who advised one of his patrons to get a sphygmomanometer as it would, if judiciously handled, increase his income by several hundreds a year. Personally, I think that a scientific instrument should be used for the acquisition of knowledge, and the application of such for the advantage of the patient. It is not the mere record of a fact but the significance of the fact which matters.

We must now consider how the arterial pressure is increased, maintained and regulated by the resistance to the outflow. Increased resistance calls forth greater energy on the part of the heart with heightened blood-pressure and this is maintained according to the continuation of the resistance; the pressure is regulated by the vaso-motor nervous system in accordance with the demands of different organs for an in-

creased or lessened supply of blood.

The first line of resistance is in the arterioles, which are small muscular vessels well supplied with vaso-motor nerves, and consequently readily contract on any stimulation, thus producing what the late George Johnson called their stop-cock action, and raising the proximal arterial pressure. The resistance in the arterioles is directly as their length and inversely as the square of their cross sections, or the fourth power of their diameter, and here friction and viscosity also come into play, but not to the same extent as in the capillaries. The arterioles of the splanchnic area, of the skin, and to a less extent of the muscles, are the great regulators of arterial pressure, and often their action is reciprocal—when one set is contracted the others are dilated. The arterioles of the muscles dilate after exercise.

The principal secretory organs which stimulate the vaso-motor nerves are the adrenals and the pituitary. The thyroid secretion thru the sympathetic stimulates the heart's action but it lessens the resistance and diminishes the viscosity. Both adrenalin and pituitrin, besides their specific effects, raise the blood-pressure and lower carbohydrate tolerance. Professor W. E. Dixon has shown¹ that the pituitary gland secretes into the cerebrospinal fluid and from there finds its way into the general circulation. The late Sir B. W. Richardson showed that the ordinary communication between the cerebrospinal sac and the general circulation was thru the veins at the lower end of the spinal canal. As stimulants to the pituitary gland, Dixon has so far only found pituitrin, ovarian extract and a duodenal extract.

There are numerous pressor agents which act thru the vagus or sympathetic nerves, such as digitalis, squills, caffeine, strychnine

¹*Journal of Physiology*. March 21, 1923.

and many toxins. Hard mental work and the stimulating effect of cold acting thru the sympathetic system contract the arterioles, raise the arterial blood-pressure and increase the urinary excretion.

The contraction of the arterioles of large tracts raises the general arterial pressure, but when those of small areas are only affected you merely get local effects. Take a cold hand—there may be a difference of 50 mm. of mercury between the lateral pressure in the radial and that in a digital artery, but when the arterioles are dilated there is a much less abrupt fall in the pressure-gradient. Frequent contraction and dilatation of these vessels is sufficient to give rise to tortuous and atheromatous radials, while the central arteries may be quite healthy. It is entirely due to the intervention of the arterioles that the capillaries are protected from the full hydrostatic effect of the blood when the body is in the erect posture.

The potential increases in the arteries of the limbs when they are dependent and if the arterioles are dilated from any cause the pressure in these little vessels and in the capillaries is much augmented so that you may readily get petechial hemorrhages, but, on the other hand, if the arterioles be much contracted the potential in the arteries is largely converted into kinetic energy in the arterioles and capillaries.

When you get vasomotor paralysis the resistance is transferred to the capillaries, and you get a more gradual fall in the pressure-gradient, the velocity of the blood in the capillaries is diminished, the pressure increased and transudation readily takes place. In severe cases of Addison's disease in which the vasomotor nerves are deprived of their usual stimulus, the patient may not be able to assume the erect posture. The wonderful regulative mechanism of the vaso-

motor system enables the blood to be drawn from the high pressure main, the aorta and its principal branches, to the organs or systems that immediately require it. Witness the great supply to the extremities during exertion, and to the abdominal viscera during digestion. Increase of pressure within a healthy artery improves its tone and raises its co-efficient of elasticity. It is probable, owing to these facts, as well as to the intervention of the vasomotor nerves, that the arteries of the lower extremities often contract when they are dependent, and dilate when they are raised. This of course happens most readily when the arteries are healthy and the arterial blood-pressure high. Under such conditions the common carotid can be felt contracted when the body is inverted; this increases the velocity in the arteries, arterioles, and capillaries within the cranium with a corresponding diminution in the lateral pressure. The arteries of the upper extremity obey the usual law and dilate under increased pressure. The increased tone and heightened pressure are probably the determining factors in the production of claudication of the arteries—a condition almost confined to the lower extremities, and one which is very difficult to remedy when once established. Perhaps other causal factors are excessive amount of lime salts, over-action of the adrenals and defective action of the thyroid.

At the present day, oral sepsis and intestinal stasis are credited with most of the ills which afflict humanity, and arteriosclerosis is included, but whether the toxins act directly on the vessels like syphilis or by raising the blood-pressure the advocates of these theories do not venture an opinion. Many intestinal toxins depress the circulation, while others raise the pressure in a moderate degree, and some seem to have a stimulating effect on the adrenals.

The second line of resistance is in the capillaries, and here the resistance is a compound of potential, friction and viscosity. Of course the larger the capillary bed the less the resistance. The mere weight of the blood in the capillaries causes a certain amount of resistance or inertia to its onward movement and more especially when there is a great supply thru dilated arterioles, as the velocity is possibly converted into pressure, so in the web of the frog's foot you can see a to-and-fro movement when there is great vascularity. In these little tubes there is an enormous amount of friction, not only of the corpuscles against one another, but also against the walls of the vessels. The resistance is directly as the length of the tube, and inversely as the square of the sectional area; directly as the square of the velocity—and inversely as the fourth power of the diameter, and directly as the viscosity. The extra-vascular pressure is about one-fourth of the capillary pressure, from which it is derived, and is an important force in carrying on the lymph circulation.

Dupre, Denning and Watson showed that a given increase of pressure exerts a much greater accelerating effect in the rate of flow thru tubes of fine caliber than thru tubes of wide bore. This corroborated my previous observations that a static increase in the arterial blood-pressure of 32 centimeters of blood was sufficient to double the capillary velocity. Whereas when the ingress to the capillaries is free at a low arterial pressure the velocity is diminished and the lateral pressure increased. In filtration the lower the pressure the less but more concentrated the filtrate.

Viscosity.—The blood is a very viscous fluid, being five or six times that of water, and in polycythemia it may be 10 to 12 times. The coefficient of viscosity in the

tarry blood of Asiatic cholera may be so great that it will not pass thru the capillaries. High temperature lessens and cold increases the viscosity. I found that when the velocity of the blood in the capillaries is reduced to 1 mm. per second the blood becomes charged with CO_2 which enlarges the red corpuscles. Recently Mellanby and Wood¹ have shown that an increase in the CO_2 in the blood not only enlarges the red cells, but augments the interchange of ions; the anion, chlorine, passes into the cells and the kation, sodium, increases in the serum. The transport of CO_2 in both the corpuscles and serum is a bicarbonate of sodium and thus the alkalinity of the blood is maintained. The alkalinity improves the tone of the vessels, while acidity lessens it.

Dale and Richards held that histamine lowers arterial pressure by enlarging the capillaries and causing a free transudation. On the contrary, R. J. S. McDowall² showed that the fall is the result of diminished output of the heart, due partly to pulmonary constriction and partly to less blood reaching the heart as a result of increased capacity of the capillaries. This view of McDowall would seem to me to require corroboration, as in the experiments of Lichtheim and Cohnheim the arterial blood-pressure did not fall after one-half the branches of the pulmonary artery had been ligated.

Adrenalin and pituitrin seem not only to constrict the arterioles and capillaries but also increase the viscosity, while thyroid and iodine lessen it; hence in hyperthyroidism the systolic pressure is raised and the diastolic lowered. The viscosity is increased by the salts of calcium, magnesium, manganese and strontium; the action of these agents is slow and it is, therefore, difficult to estab-

¹*Journal of Physiology*, March 21, 1923.

²*Journal of Physiology*, March 21, 1923.

lish their rôle in raising the arterial blood-pressure. The negative effect is fairly rapid as under decalcifying agents, such as citric acid, phosphoric acid and their salts of ammonium, potassium and sodium, the viscosity is lessened and the blood-pressure lowered.

Krogh says that histamine, urethrane, deficiency of oxygen, the ultra-violet rays, CO₂ and other acids dilate the capillaries. When the circulation in a frog's leg was stopped he found that the capillaries of the web dilated from 5 to 20 microns, and again contracted when the circulation was re-established.

The Effects of High Blood-Pressure on the Arteries.

High arterial pressure is, in my opinion, the primary cause in the main of degenerative changes in the arteries, but once these changes are established we get a vicious cycle, as they increase the work of the heart, and thus maintain the high pressure. Of course, the walls of the vessels may be directly affected by toxins and microorganisms, such as the spirocheta pallida, the typhoid bacillus, etc. Syphilitic disease of the aorta is not at all uncommon, and the late George Oliver showed that the elasticity of the arteries may be thus impaired irrespective of the tension. In cases of arteriosclerosis there is often evidence of intestinal toxemia, and that the colon bacillus has been at work outside the colon, even when the blood-pressure is only moderate. However, the question how stress and strain produce degenerative changes in the arteries is one of the most important in medicine, because after the age of 50 years, arteriosclerosis, directly and indirectly, kills more people than any other disease.

When you get a continuous lateral pressure of 200 mm. of mercury or more in the

aorta and its main branches there is no period of repose for the vessels but merely periods of more or less distension, this constant strain wears out the elasticity and interferes with the circulation in the small nutritive vessels—the *vasa vasorum*. With the impairment of nutrition you get irritative and proliferative changes in the sub-endothelial layer of the intima; atheromatous degeneration follows, and subsequently the fatty acids in the lime soaps deposited in the atheromatous patches may be replaced by phosphoric acid with the formation of calcareous plates. All these changes cause a loss of elasticity, and in proportion to this loss the energy of the heart is not stored up. With the loss in the conservation of energy the heart has got more work to do in order to carry on the circulation; the energy is largely expended during systole, and the disparity between the systolic and diastolic pressures increases with consequent longitudinal straining of the arteries.

Continuous high pressure leads to dilated hypertrophy of the heart with increased output, and this in turn gives rise to further stretching of aorta. When the elasticity of that vessel is lost, there is a still further demand on the left ventricle, so altho the diastolic pressure falls the systolic pressure is maintained. With the great disparity in the blood-pressures the velocity is increased, there is a free return to the ventricles with raised intraventricular pressure, and consequently greater dilatation and hypertrophy. The output is augmented, the velocity is increased, and longitudinal straining—especially along the greater curvature of the aorta—takes place. You may now get a difference between the diastolic and systolic pressure of 120 or 130 mm. of mercury, or more (a pulse pressure which some would consider evidence of a very efficient circula-

tion, but which I would deem a rapid stride to the grave, *facilis descensus Averni*.

With a systolic pressure of 250 mm. and a diastolic of 120 mm. of mercury you would have a velocity of 2450 mm. in the second. The energy would be chiefly expended during the systole and would give marked recoil of the heart at the end of the systole with negative and positive waves in the circulation which would obstruct one another. In such a case when failure begins to set in, you may find the force of this huge heart, which shakes the whole chest and perhaps the bed on which the patient is lying, only feebly represented at the periphery. In these cases the storage is defective, the pressure and velocity are more or less intermittent and there is an enormous waste of energy.

In cases of free aortic regurgitation the difference in the pressure-gradient, and consequently in the velocity, is often very great, the cardiac hypertrophy becomes extreme and subsequent failure rapidly takes place. The question of storage forms an important element in prognosis and, on this account, aortic regurgitation occurring early in life from a rheumatic lesion when the aorta is fairly healthy is, *ceteris paribus*, very much less serious than a similar lesion arising secondary to degeneration of the aorta. If there be any elasticity left in the aorta and its principal branches there is an advantage in a relatively high diastolic pressure because you thus make the circulation more uniform and do not necessarily raise the systolic pressure, or increase the work of the heart. In estimating the condition of the wall of the aorta, in addition to the evidence of the pulse-pressure, valuable information may be obtained by the ear in regard to the character of the second sound, and if there be any delay in the transmis-

sion of the pulse-wave the aorta is still fairly elastic.

You must be careful to distinguish between the velocity of the blood and that of the pulse-wave; with the former the greater the resistance, the higher the diastolic and the lower the systolic pressure, the less the velocity of the blood; but in the case of the pulse-wave, the greater the resistance, the higher the diastolic pressure, the more rigid the arterial wall, and the greater and more rapidly the energy is imparted by the ventricle, the quicker the transmission. The rigidity of the arterial walls may depend on two different conditions and it is important to distinguish between them, *viz.*, an atheromatous and calcareous degeneration with loss of elasticity, or an increase in the coefficient of elasticity due to high blood-pressure; in both cases the velocity of the pulse-wave is increased.

The velocity of the blood in the smaller arteries is inversely as their cross sections. The circulation of the blood is one of the most perfect pieces of mechanism in the universe, and disastrous results are apt to follow the tinkering of amateurs. Thank God, there was no amateur at the Creation.

In a healthy aorta the coefficient of elasticity increases with the internal pressure, but long continued strain impairs the elasticity and leads to degenerative changes in the *intima*. In cases of granular kidneys the diastolic pressure is usually maintained at a high level, as well as the systolic, hence you do not get the same elongation and enlargement of the aorta as you do in the cases which we have been describing. In a contracted artery the maximum distension only occurs under high internal pressure, whereas in a relaxed artery the greatest pulsatile expansion takes place at low pressure.

Aneurism.—In chronic granular kidneys

miliary aneurisms of the brain are very common, but thoracic aneurism is extremely rare. High tension leads to degenerative changes in the vessel, but it requires an acute stress and longitudinal straining to dilate and rupture the coats of the vessels. In 1898 when writing on "Aneurism of the Thoracic Aorta," I said, "sudden high pressure, especially when associated with overrepletion of the vessels, is a more potent agent than chronic high tension in the production of aneurism." When a large thoracic aneurism is formed, the diastolic pressure falls, and under the usual treatment by rest, limited fluid, and iodides the cardiac hypertrophy abates, so at the autopsy the heart is often found small, or only of normal size.

The German beer drinkers often suffer from a dilated aorta and hypertrophied heart, because the alcohol causes vasomotor paresis, the vascular system becomes enlarged and overrepleted, and the intraventricular pressure is raised; the systolic pressure higher and the diastolic rather lower, hence we get longitudinal straining. Moreover, these beer drinkers are hard working men and liable to acute strain. Alcohol *per se*, notwithstanding its bad character and quality in a dry country, has nothing whatever to do with the production of arteriosclerosis.

Hyperthyroidism.—Thyroid secretion lessens the viscosity and lowers the resistance so that altho the heart is stimulated, the mean pressure is not high, therefore, you do not get arteriosclerosis unless there be also hyperadrenalinism. Josué and Oskar Klotz produced arteriosclerosis in rabbits by the intravenous injection of adrenalin. They also found that when rabbits were swung by the hind legs, or thus suspended for a few minutes daily you soon got advanced lesions in the aorta. In this connec-

tion it is worthy of note that the calcium content of the blood in rabbits is usually high, and in the human being the arteries of the lower extremities, which are usually subjected to the highest blood-pressure, are most prone to arteriosclerosis.

Women are not so liable to arteriosclerosis as men because their physical strain is less, and the thyroid gland, especially during the menstrual epoch, is more active. They are, however, liable to sudden increases of blood-pressure from emotional causes, hence in them the aorta suffers more than the peripheral vessels. It is like the effect of suddenly turning a stop-cock in a water pipe connected with the main supply; it is the larger pipes which get the most stress. We are not now allowed to put such a tap in a main water pipe, but it is more difficult to legislate for the vasomotor system in an emotional individual. The aorta will stand a good deal of stress and strain without losing its elasticity if the duration be short. In women who have borne large families the long-continued high blood-pressure and cardiac hypertrophy give rise to general arteriosclerosis. In many women after the menopause when the function of the ovaries ceases, there is defective action of the thyroid and overaction of the adrenals, consequently raised blood-pressure, arteriosclerosis, and a growth of hair on the face. In myxedema the blood-pressure is not raised.

Those arterioles in the splanchnic area, the skin and muscles which are the chief factors in raising the general arterial blood-pressure, are not themselves liable to degenerative changes, because the velocity of the blood in them is great and the lateral pressure low. On the other hand, the cerebral and coronary arteries which are poorly supplied with vasomotor nerves are very

liable to atheromatous changes. The parts of the coronary arteries which are imbedded in the cardiac muscle often remain healthy, when the proximal parts are much degenerated.

In the pulmonic circulation arteriosclerosis only occurs in cases of long continued high pressure, such as occurs in mitral stenosis and then the pulmonic veins are as much involved as the arteries. Altho the vasomotor supply is scanty it is sufficient to maintain good tone. At death the pulmonic arteries empty themselves into the veins. This is readily shown by injecting some formaldehyde into the trachea after death; then the arteries will be found empty, but the veins full of clotted blood.

Angina pectoris is not necessarily associated with high blood-pressure, tho depressor treatment is usually adopted. Sir Clifford Allbutt, whose views are generally accepted, says that it is due to aortitis and involvement of the vagus nerve supply.

However, its precursors may be put down to high blood-pressure and often syphilis. I shall deal further with this under treatment.

Treatment.

Health, longevity and intelligence are largely questions of heredity. Those medicos who are anxious to establish a medical autocracy, destroy the liberty of the subject, and legislate for the individual from the antenatal state to the grave, had better start with the ancestors. An American wisely said a man cannot be too particular in the selection of his parents. However, as it stands we have no choice in the matter, and so we should make the best of what we have and bless or curse our parents as circumstances demand. "Man," says Emerson, "is physically as well as metaphysically, a thing of shreds and patches borrowed un-

equally from good and bad ancestors, and is, therefore, a misfit from the start."

Cazalis said "a man is as old as his arteries," and it is with these conduit pipes that we are now dealing. For the maintenance of healthy vessels a well-regulated balance of the activities of the adrenals, the pituitary, and the thyroid is necessary. Overaction of the first two is the important factor in the causation of continued high pressure. There are many pressor agents, to some of which we have before referred, and the demands of the system often call forth increased cardiac action. If you want to have more than a vegetative existence a fair blood-pressure is necessary. Life should imply action, and efficiency is much more desirable than mere longevity. Moreover, a life of indolence and luxury is not only inefficient, but often short.

If there be any tendency to overaction of the pituitary and adrenals, the diet should be non-stimulating, largely fruit and vegetables. The patient can have some iodine to stimulate the thyroid. After the menopause, women should have some ovarian substance and perhaps also thyroid extract.

The late Dr. George Oliver in his admirable work on the tissue lymph circulation published in 1904, came to the following conclusion: "(1) That the food constituents themselves (proteids, fats and carbohydrates) do not possess the power of starting the mechanism by which lymph is dispensed to the tissues thru the body. (2) That Nature, however, associates with our food-stuffs small quantities of very active substances which bring into play that mechanism, tho these substances themselves are practically devoid of food value, and that man frequently increases this natural lymph by the use of salt and beverages containing bodies which also incite the flow of lymph.

Such bodies as uric acid, creatin, creatinin, xanthin, glycogen and sodium chloride perform an important function in nutrition, for during digestion they act as distributors of lymph to all the tissues—an office which the nutrient constituents themselves (proteids, fats and carbohydrates) are incapable of discharging." Personally, I do not think that in the present day the so-called vitamins have entirely replaced the organic and inorganic lymphagogues. Recently Cathcart has shown that alcohol and soups are the best starters of stomachic digestion. Oliver also gave us some new depressor agents, such as the hippurates of ammonium and sodium, lichenin, leucin and Witte's peptone. I have long been in the habit of prescribing large doses of the benzoate of sodium in renal disease with high blood-pressure.

Decalcifying agents, especially when combined with a vagotonic such as pilocarpine, quickly lower the blood-pressure, but you should be careful not to carry the process too far, as it is easy to remove so much lime as to give rise to albuminuria. Three summers ago I saw two patients with such intense edema of the eyelids, conjunctivæ and face that thrombosis of the cavernous sinus was suspected. I diagnosed decalcification from the too free use of lime juice. With the substitution of milk and a powder of lactate of calcium the edema quickly disappeared. In cases of high pressure with frequent micturition, aconite is very valuable. Most people over sixty require some preparation of thyroid or thyroid and iodine. For men who are troubled with their prostates thyroid is indispensable.

No one should convert his cecum into a cesspool, and in all cases of intestinal stasis the bowel should be well cleared and antiseptics used. Oral sepsis is usually amenable to treatment without creating an

edentulous race.

Angina pectoris is usually preventable, and easily treated by anyone with a little foresight. Thyroid and iodine, and perhaps small doses of mercury are our best preventives. If there be any vagotonia, atropine should be added. Decalcifying agents are very useful if the pressure be raised. In true angina when there is great cardiac distress, a slow, small, firm pulse with moderate blood-pressure, immediate relief is afforded by eliciting the "Albert Abrams' cardiac reflex of dilatation." My method of procedure is to place the end of a cork of about an inch and a quarter in diameter and one and a half inches in length on the third and fourth dorsal spines, over the intervening space, give 30 taps on the other end with a small mallet weighing about one and a half ounces. This stimulates the depressor nerve. You then place the cork on the second dorsal spine and give 30 taps on the other end, this prolongs the reflex; after a minute repeat the series, then wait another minute and again repeat the series. By this time, no matter how severe the attack, the patient should have obtained great relief. This procedure can be carried out several times daily. If there be, as there often is in these cases, pylorospasm with distension of the stomach, you should also concuss the fifth dorsal spine which relaxes the pylorus. The usual remedies in angina pectoris are nitrite of amyl, ethyl iodide, nitroglycerine, erethrol-tetranitrite, and nitrite of sodium, but their effects are very evanescent, and if the blood-pressure be low they are apt to do harm. If there be much overaction of the vagus the irritation of the nose from the inhalation of the nitrite of amyl may induce vagal inhibition. In such cases, Abrams recommends first spraying the nostrils with cocaine.

When there is great cardiac oppression,

restlessness, hurried breathing associated with a large, dilated, failing heart, and dilated aorta, the "Albert Abrams' cardiac reflex of contraction" affords great and immediate relief. If this reflex fails, the prognosis is bad, and cardiac tonics, such as digitalis, are not likely to be of much avail. This reflex is elicited by concussing the seventh cervical and second dorsal spines in the manner before described.

I have a patient, a medical man, aged 70, who suffers from chronic myocarditis, cardiac fibrosis and an enormous heart, the apex beating in the mid-axillary line. Over ten years ago he suffered from cardiac failure, was water logged, and in a dying condition. The distress was so great that he could neither sleep nor lie down. He was extremely restless, seeking ease and comfort and could find none. His breathing was shallow, irregular and hurried; his pulse feeble and very irregular in force and rhythm. There was, and has been ever since, slight albuminuria. He recovered and has had "Abrams' cardiac reflex of contraction" carried out regularly twice daily. When on any occasion it is omitted he feels the want of his cardiac stimulus. After each séance the transverse measurement of the heart is reduced by at least two inches and the contraction continues for some hours. He is as happy as the day is long, and every time I see him he has got a fresh joke. He has often told me that if at any time by chance his heart should become regular he would think that there was something the matter with him. He is always energetic in mind and body; it is only recently that I have been able to persuade him to give up practice and confine himself to his numerous hobbies.

The Abrams' cardiac reflex of contraction is the most efficient remedy which I know in the treatment of aneurism of the aorta.

Prevention is better than cure, and a self-regulating and self-repairing pump can be kept working for many years, if the supervisor knows his business. I have heard a distinguished heart specialist say "you cannot set back the hands of the clock." Perhaps he cannot do so, but many others make the attempt, and it is often easy to prevent the clock running down. There are too many sudden deaths from heart failure in the present day.

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VARIATIONS IN BLOOD-PRESSURE; THEIR CAUSATION.

BY

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Eng.

Apart from syphilis, abnormal variations in blood-pressure appear to depend on the nature of the infection of the contents of the small intestine in chronic intestinal stasis.

As I pointed out there are two extreme series of changes which develop in stasis and between these two extremes there are innumerable combinations and modifications varying with the vitality of the individual. In the one extreme the individual endeavors to oppose the stagnation of the intestinal contents by a hypertrophy of the muscle coat of the bowel and by the development of membranes and bands which secure the colon in position and so prevent its prolapse. In time these bands unfortunately become stronger and firmer and contract. By so doing they angulate the bowel at the point where they are most developed, anchoring it and obstructing its lumen. The first band to develop and the one which usually does most harm is situated in the left iliac fossa.

This I called the first and last kink. At the points of constriction by bands cancer is readily produced from the mechanical impact of the fecal matter upon the detracted segment of bowel. Other results of the damming up of material in the large bowel are duodenal and gastric ulcers, cancer of the stomach, chronic inflammation and later cancer of the pancreas, gall-stones and Bright's disease in its several forms.

The mechanical changes which develop in the other extreme differ completely. The individual makes no attempt to retain the colon in its normal position by the formation of bands nor to oppose its dilatation. The muscle coat and nervous supply of the wall of the intestine wastes while the bowel becomes dilated, elongated and prolapsed.

Cancer of the colon does not develop in this type since there is no point at which the contents of the bowel are dammed up as in the case of a constriction produced by a contracting band nor do ulcers form in the duodenum or stomach. Gall-stones and pancreatitis are very rarely present while the changes in the kidneys are such as result from the irritation produced in the process of elimination by this organ of the bacillus coli communis and occasionally streptococci.

The first type is found in the vigorous apparently well-nourished subject who is generally regarded by his friends as being strong and healthy and who is not considered to be the subject of chronic intestinal stasis. His heart and vessels are all hypertrophied, the aorta is dilated, the walls of the arteries are thick and degenerated and the blood-pressure is in excess of the normal. Naturally the rigid vessels of the brain which receives such a poor support from the delicate texture of this organ are very liable to yield in this condition.

In the second type the blood-pressure is usually markedly subnormal while the heart,

aorta and blood-vessels are small and have thin walls.

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A NOTE OF THE PRESSURE OF THE BLOOD AND HYPERTENSION.

BY

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Using the windpipe of a goose as a cannula, the Rev. Stephen Hales demonstrated the pressure of the blood in the aural artery of a mare in the year 1733, but it was not until nearly a century later, namely the year 1828, that Ludwig and Poiseuille used a V-shaped mercurial manometer for the measurement of arterial tension. In recent years much interest has been shown in the subject by physiologists, physicians and surgeons, particularly in its application to questions of diagnosis, prognosis and treatment, and quite recently the writers have emphasized the importance of blood-pressure observations in estimating the operative risk and consequently the nature and extent of the operation that may be undertaken in the case of the surgical treatment of hyperthyroidism.¹

*See "A Contribution on the Blood-Pressure in Graves' Disease," Strickland Goodall and Lambert Rogers, *Brit. Med. Jour.*, October, 1916, 1920.

Blood-pressure is the thrust per unit area exerted by the blood upon the walls of the cardiovascular system. While the endocardial venous and capillary pressures are of interest and importance, attention has in the main centered round arterial tension, measurement of which is a comparatively simple procedure. Altho the maximum pressure recorded in the circulatory system occurs in the left ventricle during systole, the highest arterial pressure occurring during the cardiac cycle is the systolic; the lowest occurs during diastole and is termed the diastolic. Observations of the systolic and diastolic phases and their difference constituting the pulse pressure are of everyday importance, but it must be borne in mind that normal or physiologic limits are wide, and that departures therefrom do not necessarily constitute diseases but may simply be manifestations of some disorder in one or several of the factors upon which the maintenance of arterial tension depends.

These factors are:

(1) **The Force and Frequency of the Heart Beat.**—The former depends upon the integrity and amount of the cardiac musculature and upon the initial length of the heart muscle fibres (*Starling's Law*), in other words upon the state and degree of development of the myocardium and upon the degree of ventricular filling. The frequency is said to depend among other factors upon the degree of filling of the right auricle (*Bainbridge's Law*) and normally there is an inverse relationship between the heart rate and the blood-pressure (*Mary's Law*). Physiologic variations in the force and frequency of the heart occur daily, physical exertion increases the rate and also the degree of ventricular filling and thus the force of the cardiac contractions, and the blood-pressure rises. Again, emotional disturbances, not only by the known action of the

hormones of the endocrine system (*e. g.* adrenalin), but probably also by direct nervous action cause variations in the force and frequency of the heart beat and consequently in the blood-pressure.

Apart from these physiologic variations, grave interference with the force and frequency may occur in disease. In myocarditis, owing to the lack of healthy contractile muscle the force is lessened and other factors being equal the pressure is low; in cardiac hypertrophy, on the other hand, the converse occurs. Where filling is poor and the muscle atrophic as in mitral stenosis, the contractions are weak and the tension is low.

(2) **The Peripheral Resistance.**—This depends upon the caliber of the arterioles and to a much less extent upon the viscosity of the blood. The former depends upon the integrity of the musculature of the arterioles and upon the vasomotor mechanism. We have indicated how physiologic or pathologic alterations in the force and frequency may effect the blood-pressure, again the peripheral resistance may be changed physiologically or in disease. Exposure to cold causes vasoconstriction and if the other factors concerned remain constant a rise in blood-pressure will occur.

All diseases affecting either the vasomotor mechanism (*e. g.*, Raynaud's disease) or the arterial walls (*e. g.*, arteriosclerosis), other factors being equal will have an effect upon the blood-pressure. In Graves' disease the peripheral resistance is lowered by vasodilatation and thruout the great part of the course of the condition the tension is subnormal. In arteriosclerosis the arterial thickening causes a rise in blood-pressure, but one must bear in mind also that in vessels the walls of which are damaged, spasm is very liable to supervene and thus pro-

foundly modify the blood-pressure from time to time.

(3) The Total Quantity of the Circulating Blood.—

This factor is intimately connected with the distribution of the blood thruout the circulatory system as a whole. Change in the capacity of the capillaries does not constitute a change in the peripheral resistance which occurs principally in the arterioles, but may cause considerable alteration in the volume of the circulating blood. The blood-pressure is raised towards the end of pregnancy, in hydremic plethora and in chlorosis, because in all instances there is an increase in blood volume; a lowering of blood-pressure due to decrease in blood volume occurs after hemorrhage, in surgical shock and in histamine poisoning. Probably in the former of the two conditions last mentioned and certainly in the latter, there is capillary dilatation and as it were a pooling of a certain amount of the total blood in a backwater consisting of dilated capillaries. Thus the volume of the circulating blood is reduced and the tension lowered. Dale and Laidlaw² have shown that there is no failure of the heart beat in histamine poisoning, and the arteries are even contracted, but there is a fall in blood-pressure due to a paralytic dilatation of the capillaries as is evidenced by the fact that the limbs swell in a plethysmograph. Not only does a stagnation of the corpuscles in the capillaries occur but there is an exudation of plasma from the latter into the tissues and the red-cell count rises. Sometimes variations in more than one of the factors upon which blood-pressure depends may result in the blood-pressure remaining unchanged, *e. g.*, if a lowering in peripheral resistance occurs concurrently with an increased output due to better filling and increase in the force of the heart beat, the arterial tension may not be affected in the

slightest, the net result upon the circulation being only an increased velocity of the blood stream.

Blood-pressure rises as age advances and varies from hour to hour and day to day. We have referred to certain conditions, *e. g.*, work, emotion, exposure to cold, etc., which cause physiologic variations, again gravity has an influence on the pressure, so that in the standing position the tension is normally somewhat higher in the femoral than in the brachial artery. These normal variations lie within comparatively wide limits, but one must have some idea what is a normal systolic tension and this may be obtained roughly by the formula, age + 100 in the case of men, and in the case of women (age + 100) — 5 per cent. The normal diastolic pressure lies between 50 and 80 mm. Hg.

Arterial hypertension of a persistent character may be a manifestation of disease but also is frequently a compensatory mechanism whereby tissue activity can be effectively carried out in face of the particular cardiovascular lesions concerned. It would be a mistake to endeavor to lower the tension in cases of this type and, generally speaking, it is the underlying condition that calls for treatment not the actual blood-pressure itself; however, it must be borne in mind that there are certain definite dangers associated with a persistently high tension of, say 300 mm. Hg., namely, retinal or cerebral hemorrhages and cardiac dilatation and failure.

It may be as well at this stage to consider certain pathologic conditions affecting one or more of the factors which we have referred to and to briefly review the state of arterial tension in certain definite conditions, *e. g.*—

(A) **Aortic Regurgitation.**—In this condition the left ventricle is dilated and hypertrophied, the aortic valve incompetent, so

that it fails to support the systemic blood during diastole, while, furthermore, the peripheral resistance is relaxed. As a result of the increased force of the cardiac contraction and the increased output, the systolic blood-pressure is high while owing to the fact that the blood is not supported at "the two ends of the circulation" during diastole, the latter pressure is low, the pulse pressure consequently high. In the legs the tension is considerably higher than in the arms, a difference of over 100 mm. of mercury being common. This is usually said to be due to a certain amount of vasoconstriction in the lower limbs, for if the legs are placed in warm water the pressure in arms and legs becomes equal. Some authorities consider that in aortic cases the difference in pressure between the upper and lower limbs is a measure of the vasomotor reserve and if this difference becomes less pronounced, vasomotor failure may be anticipated. This is important when one considers that death in aortic regurgitation is usually due either to myocardial failure or to vasomotor exhaustion. A falling systolic pressure in aortic regurgitation must also be regarded as a grave sign, as it usually means a failing myocardium. This is probably why it is a well-recognized fact that the prognosis is better in aortic cases with a relatively high blood-pressure than in those with a comparatively low one.

One of the writers (J. S. G.³) has observed over many years that in stationary well-compensated cases of aortic regurgitation not only do the systolic and diastolic pressures remain constant in the arm but their relationship to the leg pressures remains unchanged also.

(B) **Myocardial Lesions.**—In fibroid, fatty or other degenerative conditions of the

heart muscle, owing to the reduction in the contractile tissue the force of the beat is impaired and the blood-pressure is usually low.

On exercise a healthy myocardium responds to increased work by increased contraction, so that the blood-pressure rises, but where the muscle is extensively diseased the heart fails to respond to increased work by increased contraction but dilates so that the blood-pressure fails to rise or may even fall.⁴

(C) **Mitral Stenosis.**—In this condition the output of the left auricle is obstructed so that the left ventricle is poorly filled and the muscle fibers are only slightly stretched; consequently the output and the force are both small and hence the blood-pressure is low. This is practically the opposite to what occurs in aortic regurgitation.

(D) **Arteriosclerosis.**—In arteriosclerosis the blood-pressure varies considerably, some cases having a high and others a low pressure. This variability is not to be wondered at when one considers that (1) the sclerotic processes are wont to select certain parts of the vascular system, and (2) the secondary effects produced on the heart vary enormously, not only according to the part selected, but also according to the age of onset of the disease. Roughly speaking, one may say that the site selected is largely determined by (a) the extent to which the part is used, the most used parts being more affected than the more rested parts, and (b) also by the anatomical arrangement and structure of the vessels, *e. g.*, in right-handed manual workers the right brachials are most affected, in left-handed workers the left, in professional cyclists, the leg vessels are more affected than those of the arms, etc. Should the smaller vessels be chiefly affected, or should the vessels of the

splanchnic area be specially selected, the blood-pressure tends to be high and this is specially true, should the arteriosclerosis start early in life, for in such cases not only is the peripheral resistance increased but the left ventricle becomes hypertrophied so that its force is augmented, hence two of the three factors concerned in the maintenance of blood-pressure, *i. e.*, the peripheral resistance and the force of the heart are increased.

Should the disease first make its appearance after 40, even if the peripheral resistance is affected, little cardiac hypertrophy takes place, so that in such cases, altho raised, the blood-pressure is not so high. In other words, the height of the blood-pressure is largely determined by the age of the onset of the disease.

In this connection one might perhaps mention some observations made by one of us (J. S. G.⁵) during the war. While examining recruits with "doubtful" heart conditions, he was much impressed by the number of young men who had a high blood-pressure and definite arterial thickening. A series of over 2,000 cases all under 40 years of age were systematically investigated, histories were carefully analyzed, as regards occupations, habits, especially with reference to alcohol, tobacco, exercise, games, previous or family disease, etc. All the cases were examined three times, standing, lying and after a definite amount of exercise. Exercise tolerance tests, blood-pressure reactions (three observations) were carried out and recorded while, in addition, every case was electrocardiographed, X-rayed, and had the urine examined. These cases have since been the subject of a most elaborate analysis. On classifying the cases into age groups, it very soon became apparent that the usually accepted etiologic factors of arteriosclerosis (*e. g.*, alcohol, syphilis,

gout, strain) could not possibly be the causative factors in at any rate the majority of the younger groups. In the group under 20, scarlet fever was by far the most common and constant antecedent disease. This occurrence of arteriosclerosis in men under 20 forced one to the conclusion that the disease often started much earlier in life than was usually recognized.

With a view to further investigating this point a series of observations were made on young children when many definite cases of arteriosclerosis were found, even before eight years of age. It would appear, therefore, that arteriosclerosis often starts very early in life, possibly in scarlatinal nephritis.

Another point of great importance to bear in mind in this connection is that when arteriosclerosis materializes after 40, the heart not only has comparatively little power of hypertrophy but that the nutrient arteries to the heart itself are often themselves affected; hence the large, soft, atonic, horizontal heart so often met with in these cases. Again as mentioned previously in this paper, arteriosclerosis is often a more or less local disease affecting chiefly one artery or possibly a set of associated arteries; *e. g.*, those of the arm or leg. Thus local variations in blood-pressure are common, one often finding the pressure notably higher in arms than in legs or *vice versa*, or again the pressure may be notably higher in one leg or arm than in the other corresponding limb; it is in fact often possible to map out the distribution of the arterial damage by the local variations in pressure.

Finally it should be pointed out that arterial spasm is very wont to occur in damaged vessels and this again tends to cause variations in pressure, so that opinions on prognosis, treatment, etc., based on isolated blood-pressure observations are worthless. It is highly probable that the unequal pres-

sures noted in many cases of aneurism are really due to the associated arterial degeneration which is the cause of the aneurism, rather than to the actual aneurism itself. In peripheral arteriosclerosis all vasomotor reactions are impaired, hence rapid variations and adjustments in blood-pressure are impossible, another point of great practical importance in treatment.

(E) **Disturbances in the Endocrine System, Particularly Hyper- and Hypo-thyroidism.**—The exact relationship which the various members of the endocrine chain bear to one another is still an open question. It is certain that where there is deficiency of adrenalin in the blood stream as in Addison's disease, the blood-pressure is abnormally low. Blachford and Sandford⁶, have, moreover, demonstrated a depressor substance produced by the thyroid in Graves' disease, and thruout the greater part of the course of this condition the tension is lower than normal. At its onset and towards its termination, however, the tension is raised and this is probably due to relative over-action of the suprarenal.

In hypothyroidism, on the other hand, the tension is above normal. This again is probably due to relative suprarenal over-activity owing to withdrawal of a certain amount of thyroid secretion.

The pathology of pituitary diseases is still very obscure, but it is known that where excess of the secretion of the posterior lobe occurs, the blood-pressure is raised and altho there is often a marked rise in tension at the menopause, the influence of the secretions of the genital glands is not at present fully understood.

Many other conditions by interfering with one or several of the factors to which we have constantly referred and upon which the state of the arterial blood-pressure depends may cause hypertension. There is a

raised blood-pressure in practically all kidney lesions except tubercle and lardaceous disease. A rise beyond that which normally occurs towards the later months of pregnancy when the blood volume as a whole is increased, leads one to be on guard against eclampsia.

Hypertension occurs in Cheyne-Stokes respiration, in the latter half of the first, and during the second stage of asphyxia,* in such conditions as polycythaemia rubra, emphysema, and chronic bronchitis, in constipation due to the absorption of the products of the bacterial decomposition of certain amino-acids in the intestine with the production of such substances as indol, skatol, and phenol, in the crises of tabes, in melancholia and in many other conditions.

Certain drugs produce a rise in tension: digitalis and its congeners by augmenting the force of systole and by decreasing conductivity and so promoting a better ventricular filling, adrenalin by increasing the force and frequency of the heart beat and causing peripheral vasoconstriction, pituitary by its action on unstriped muscle causing vasoconstriction with the curious exception of that of the renal vessels, eserine by its action on the parasympathetic system and the vasoconstriction produced thereby and many others acting upon one or several of the primary factors.

The lowering of tension brought about by thyroid extract is well known. Iodides probably act in the same way by promoting thyroid activity. According to Ransom⁷ and others, iodides produce saturation of fatty acids which in an unsaturated condition inhibit autolysis in the thyroid, and probably organic iodides (*e. g.*, iodoform) act better than the inorganic preparations. Nitrites

*This applies to experiments on animals and is probably true for man also.

and glyceryl trinitrate act by causing vasodilatation.

We have referred to the treatment of the underlying cause of persistent hypertension and to the fact that a raised blood-pressure does not call for treatment simply because it is raised, unless there is danger of hemorrhage, or cardiac failure, in fact the hypertension is often conducive to the patient's well-being and it would be a mistake to lower it. Where this is desirable, however, a temporary reduction, never a permanent one, can be effected by acting upon the mechanisms we have described, namely by the drugs referred to above, by causing vasodilatation, by hot baths, by reducing the blood volume by venesection, and in other ways. Similarly by guarding against elevation of tension thru excessive injection of fluids, or pressor substances derived from meals and particularly nucleo-proteins—in other words by carefully dieting, the tension may be maintained at the level most suited to the patient's physiologic needs.

It is not intended here to go into further detail. The object of the authors has been rather to regard the subject generally and it is hoped from a scientific standpoint, reviewing the causes of the tension of the

blood rather than the clinical aspects of abnormalities of blood-pressure, and regarding the abnormal in terms of interference with one or more of the factors upon which the normal depends, factors which are variable in response to the adaptations to environment, which may be gravely affected in diseases of the structures which function in response to their activity and which may be influenced by treatment. It is claimed that only by full consideration of details of this nature can we hope to gain a correct perspective in dealing with cases of high or otherwise abnormal blood-pressure.

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THE PRINCIPLES OF REGULAR MEDICAL PRACTICE.

"The medical profession makes no claim to heal all diseases nor, in fact, to heal any disease at all," says Dr. Frank Crane. "All it claims is to bring as near as may be the sum total of intelligent investigation, experience, and skill toward assisting nature's recuperative power. That is all any doctor can do, and that is all any honest doctor says he can do."

"Nature itself does the curing. The doctor helps. And as a rule a well-educated and trained doctor helps more than a quack, for the simple reason that he is better educated, has had wider observation, and is more responsible."

YOUTHFUL HYPERPIESIS.

BY

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There is a type of patient who presents himself with four cardinal symptoms, breathlessness on exertion, palpitation, pain over the precordial area and a marked tendency to cyanosis.

It is to this latter characteristic that I

its implications, for it places the origin of this type of high pressure quite outside of the arterial system and locates it definitely in the veins.

Yet there is no question of "back pressure," as it is called; the subjects are young, they possess sound hearts and are capable, at times, of severe exertion. They are indeed, as a rule, the victims of a toxemia which comes and goes in its influence on them. The following table gives an account of thirty-eight of them as regards age, and other circumstances:

TABLE I.

No.	Name.	Age.	Station.	Gas, Shell Shock, or Fevers on Service.	Fitness before Service.	Precordial Pain.	History of Rheumatic Fever or Rheumatism.
1	Abbott, R.	20	Home	Tonsillitis, 10/15	Unfit—rheumatism	+	+
2	Abbott, W.	24	Home	" Rheumatism," 10/15	Unfit—rheumatism	+	+
3	Alexander	31	Gallipoli		Unfit—{ malaria }	+	+
4	Arnott	18	Gallipoli	Oedema of face, 8/15	Fit	-	-
5	Brown	28	Home	Diarrhoea, 12/15	Fit	+	+
6	Bate	26	France	Gas, 25/9/15	Fit	-	-
7	Batters	21	France	T.F., 19/8/15	Fit	-	-
8	Belinfante	20	Gallipoli	" Rheum." before going out	Fit—{ Typhoid, scarlet, at 10 } years	+	+
9	Brown, T.	33	Home	Pericarditis, /15	Fit	+	-
10	Brown, C.	25	Home		Unfit—{ Scarlet Tonsillitis }	-	-
11	Bruce, A.	20	France	Gas, 25/9/15	Fit (diphtheria)	+	-
12	Bruce, W.	25	Gallipoli	Septic lung wound, /15	Fit	+	-
13	Burnett	21	Home	Tonsillitis, 10/15	Fit	+	No record
14	Collins	41	France	" Rheumatism," 1/15	Fit old soldier—{ Malaria Dysentery }	No mention	+ (T.F.)
15	Cockerell	22	Home	—? T.B.	Unfit—haemoptysis	+	-
16	Colley	36	France	" Rheumatism," 12/15	Unfit—rheumatism	+	+
17	Cook	31	Home	Appendicitis, 4/15	Unfit	+	-
18	Cooper	46	France	Mysalgia, /15	Unfit—rheumatism	+	+
19	Corrigan	21	Gallipoli	{ Dysentery, /15 }	Fit	+	+
20	Davies	16	France	Febrile attack, /1	Fit	+	+ (T.F.)
21	Dixie	28	Home	Rheumatism, /15	Fit	+	+ (T.F. at home)
22	Dobbs	20	France	Rheumatism, /15	Fit—growing pains ?	-	-
23	Elliff	38	Home	Antral abscess, /15	Fit	+	No record
24	Fletcher	41	Home	Rheumatism in camp, /15	Unfit—malaria, rheumatism	+	-
25	Fogden	24	Home	" Pleurisy," /15	Fit—scarlet fever	-	-
26	Evans	22	Home	Diarrhoea, /15	Fit	-	-
27	Elliott	23	Gallipoli	Cough	Unfit—" old heart case "	+	- [? T.F.]
28	Evans	19	Home	" Malaria, /15 }	Fit	-	No record
29	Fischer	30	Gallipoli	{ Dysentery, /15 }	Fit	-	+
30	Greenfield	29	Home	Rheumatism	Unfit—rheumatism	+(definite spleen)	+
31	Gates	17	Home	Rheumatism	Unfit—rheumatism	+	+
32	Gooch	17	Home	Rheumatic fever, 7/15	Fit—rheumatic fever, 1911	(Patient absolutely still)	+
33	Greenslade	39	France	" Headaches," 6/15	Fit	-	-
34	Hadow	19	France	Rheumatism, /15	Unfit—rheumatism	+	+
35	Hancock	40	France	{? Stone in bladder; rheu-	Fit	+	+
36	Hewett	25	France	matism, /15	Fit	+	+ [T.F. ?]
37	Hickie	24	France	Rheumatism, /15	Unfit—pneumonia, 1903	-	-
38	James	16	Home	..	Fit	-	-

desire to draw attention, because, as a matter of observation, those showing it have, in the great majority of cases, an increased systolic blood-pressure and also, as a rule, an increased diastolic pressure—that is to say, an obvious venous stasis is accompanied by an increased pressure. We should expect this, but not, perhaps, all

The average blood-pressure for this group was 150-160 systolic and 110 diastolic. I devoted long and anxious thought to the reason why the peripheral stasis I have spoken of should occur. I obtained no light on the subject until, more by chance than design, I made some measurements of the chest expansion in these cases.

In the following table the results of fifty such examinations are given:

TABLE II.

CHEST EXPANSION TABLE
(Functional Heart Disease)

No.	Age.	Height.	Inpiration.	Expiration.	Expansion.
1	24	6·1	32 $\frac{1}{2}$	30 $\frac{1}{2}$	2
2	22	5·10	35	33	2
3	21	6·2	38	36 $\frac{1}{2}$	1 $\frac{1}{2}$
4	40	6·1	35 $\frac{1}{2}$	34 $\frac{1}{2}$	1
5	27	6·1	35 $\frac{1}{2}$	33	2 $\frac{1}{2}$
6	25	6·11	39	35 $\frac{1}{2}$	3 $\frac{1}{2}$
7	35	5·9	36 $\frac{1}{2}$	34	1 $\frac{1}{2}$
8	20	5·8	32 $\frac{1}{2}$	30	2 $\frac{1}{2}$
9	21	5·9	33	31 $\frac{1}{2}$	1 $\frac{1}{2}$
10	34	5·9	34 $\frac{1}{2}$	32	2 $\frac{1}{2}$
11	23	5·11	37	35 $\frac{1}{2}$	1 $\frac{1}{2}$
12	20	5·8	35 $\frac{1}{2}$	32 $\frac{1}{2}$	3
13	20	5·9	35 $\frac{1}{2}$	33	2 $\frac{1}{2}$
14	22	5·8	32	30	2
15	30	6·10	36	34 $\frac{1}{2}$	1 $\frac{1}{2}$
16	18	6·1	35 $\frac{1}{2}$	32	2 $\frac{1}{2}$
17	20	5·9	35	34 $\frac{1}{2}$	1
18	25	5·8	34 $\frac{1}{2}$	32	2 $\frac{1}{2}$
19	18	6·1	35 $\frac{1}{2}$	33	2 $\frac{1}{2}$
20	36	5·8	35	33	2
21	23	6·11	34	32	2
22	25	6·11	37 $\frac{1}{2}$	36	1 $\frac{1}{2}$
23	19	5·7	32 $\frac{1}{2}$	31	1 $\frac{1}{2}$
24	41	5·8	35	33 $\frac{1}{2}$	1 $\frac{1}{2}$
25	30	6·4	32 $\frac{1}{2}$	31 $\frac{1}{2}$	1
26	41	5·8	38	37	1
27	23	5·7	34	31	3
28	19	6·1	34 $\frac{1}{2}$	32	2 $\frac{1}{2}$
29	20	6·0	33	32	1
30	22	5·3	34 $\frac{1}{2}$	32	2 $\frac{1}{2}$
31	35	5·11	35	33	2
32	44	6·8	37	35 $\frac{1}{2}$	1 $\frac{1}{2}$
33	30	5·11	39 $\frac{1}{2}$	36	3 $\frac{1}{2}$
34	32	6·3	32 $\frac{1}{2}$	30	2 $\frac{1}{2}$
35	28	6·10	36 $\frac{1}{2}$	33 $\frac{1}{2}$	2
36	22	5·11	34 $\frac{1}{2}$	31 $\frac{1}{2}$	2 $\frac{1}{2}$
37	23	6·9	33 $\frac{1}{2}$	31	2 $\frac{1}{2}$
38	18	5·9	37	35	2 $\frac{1}{2}$
39	27	6·3	39	36 $\frac{1}{2}$	2
40	20	5·10	38	34	2 $\frac{1}{2}$
41	23	6·10	36 $\frac{1}{2}$	33 $\frac{1}{2}$	3
42	19	5·6	35	31	4 $\frac{1}{2}$
43	23	5·11	35	31 $\frac{1}{2}$	3 $\frac{1}{2}$
44	19	5·11	33 $\frac{1}{2}$	32 $\frac{1}{2}$	1
45	22	6·7	34 $\frac{1}{2}$	33	1 $\frac{1}{2}$
46	33	6·3	31	29	2
47	20	5·10	35	33	2
48	28	6·0	38 $\frac{1}{2}$	37	1 $\frac{1}{2}$
49	28	6·6	37	34	3
50	30	6·10	36 $\frac{1}{2}$	33 $\frac{1}{2}$	2

It will be seen that only one of the fifty cases had an expansion from *full expiration* to *full inspiration* of four inches. Some seven had expansions of three inches. The number with two inches was twenty-five and with one inch, seventeen. The percentages are shown in the following table:

TABLE III.

EXPANSION.

1 inch and fractions.	2 inches and fractions.	3 inches and fractions.	4 inches and fractions.
Percentage 30	50	14	2

This is evidently considerably below the

normal for soldiers. I recorded at the same time that sixty per cent. of those over thirty years of age were pot-bellied, yet it was not until three years had elapsed that I noticed that the chests of patients of this type, during ordinary respiration, are frequently entirely motionless and that respiration is carried out with the abdomen exclusively. When at last the fact did come home to me, I saw that these patients had largely lost the suction effect on the veins, which is the function of the opening chest. Thus, not only was there a tendency to cardiac lag in handling calls for increased circulator effort, but there was also a lag at the thorax itself.

Here seemed to be an explanation—or at least a partial explanation—of the venous stasis. I noticed, further, that most of the patients showed injected venules along the costal margins.

I now discovered that the more immobile the chest and the more bulging the belly, the higher the blood-pressure tended to be—160 up to even 180. The patient's age affected the readings a little and raised them, but not so much as might have been expected.

I fitted some of the patients with belts—ordinary leather belts—around their waists and set them to exercise. These patients soon showed a reduction of blood-pressure, owing, as I think, to the restoration of thoracic movement. Such reduction corresponded to a disappearance in every instance of the *caput medusæ* or injected venules, from the costal margins.

The venous stasis, therefore, can, I believe, be ascribed partly to the disturbance under toxic influence of the nervous mechanism and partly to the immobility of the chest. The heart, in these circumstances, is beating against a wall and consequently the

pressure in the arteries is markedly raised.

How far this "mechanism" of high pressure occurs in other types of cases I do not know; but the more experience I acquire the more I seem to find that venous stasis plays a leading part in the phenomenon of hyperpiesis.

HIGH BLOOD-PRESSURE AND ITS TREATMENT.

BY

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The study of blood-pressure and its variations in health and disease is a most fascinating and interesting one, and the importance of regular and accurate records in routine clinical work cannot be overestimated, furnishing as they do valuable information towards arriving at a proper diagnosis, prognosis and treatment of diseased conditions. A reliable sphygmomanometer should now find a place in the *armamentarium* of all who are engaged in medical practice, both in private and in hospital. Almost 100 years have passed since the first U-shaped manometer was devised for the estimation of blood-pressure, but since then many modifications and new instruments have been placed on the market. The most convenient and reliable forms now available are readily portable and do not depend for results on the oscillations of a column of mercury. The instrument which I have employed regularly

since 1915 is the "Tycos" perfected dia-phragm-dial type of Rogers, which I have found eminently satisfactory. In the old days it was considered enough to record the systolic pressure and, indeed, that was all the mercury instruments could accomplish with any degree of accuracy, but with the newer instruments we are able to estimate the diastolic pressure also. Thus we are enabled to arrive at the pulse pressure in any individual case, which we now recognize as important as indicating the degree of heart load, and in some measure the efficiency and reserve power of the heart. Nowadays insurance companies are alive to the importance of blood-pressure records in helping towards an estimate of the prospects of life of proponents. Almost all first-class companies insist on an estimation of at least the systolic pressure, particularly in the case of large proposals, or where the proponent is over 40 years of age. The general public also are being educated as to the dangers of increased pressure. In this respect Britain is still behind America, where, we are told, one of the most fashionable diseases is "blood-pressure," and where patients compare notes of their actual figures of pressure! Such an attitude is, of course, a morbid one and should be discouraged by refusal to divulge the readings. A knowledge of the actual figures tends to create a morbid interest on the part of the patient, just as may arise in fevers where the patient is aware of the temperature variations, or in glycosuria or diabetes where detailed results of sugar estimations are made known from day to day. For the same reason it is wise to refrain from unnecessarily frequent records. In discussing high or low pressure it is well to define in a general way what one regards as the limits of normal. Such limits must not be

fixed too absolutely, and must vary with the age and sex of the individual. Standard tables are, of course, in use, but rough methods of arriving at these figures are commonly accepted. Thus a maximal systolic pressure of 100 added to the age in years need not necessarily cause undue alarm, tho a more satisfactory healthy systolic pressure standard would be gotten by adding 100 to half the age. By this method the normal limits for a healthy man of 50 would lie between 150 and 125; for a woman it is about 10 mm. lower. In healthy middle life the diastolic pressure is usually accepted as two-thirds of the systolic, but later, and in old age, the frequent presence of arteriosclerosis reduces it often to about half. In my own department there exists a working rule that a systolic record of 100 or lower, or 150 or higher, calls for further investigation. A pulse pressure below 20 or over 40 bears a similar interpretation.

I have been much struck since the war years by the frequency with which one meets in practice high blood-pressure and its effects. The strenuous times we passed thru during these years, and the more rapid rate of living, both in the pursuit of business and of pleasure, seem to have increased its incidence. By high pressure I mean a persistently high pressure, not an intermittent one, tho the latter is often the fore-runner of the former. It is as well at the outset to draw a broad line of distinction between these two types, which we may term functional and organic. The former includes all cases of hypertension in which there is a varying degree of temporary physiologic disturbance, dependent upon conditions which unduly stimulate the pressor mechanism. The organic class comprises all cases of persistently high pressure

arising from mechanical and pathologic states however brought about. A simple classification may be arrived at, dependent on the primary factors which control blood-pressure. These are (1) cardiac energy, dependent on the quality of the myocardium and its nervous apparatus; (2) peripheral resistance, as determined by the elasticity of the walls of arteries and arterioles, as well as the vasomotor mechanism; and (3) the amount of blood in the circulation, or perhaps more accurately the ventricular output. Thus three main groups are suggested, depending on whether the heart, peripheral resistance, or output is chiefly involved. In most hypertension cases, however, all of these, or more than one, share in the production. Further, we can group our high pressure cases in terms of their relation to kidney disease, (1) those in which some form of nephritis (acute, subacute or chronic) is known to have preceded its advent; (2) those where there is no evidence of renal disease either preceding or at its onset. The latter group has been termed by Allbutt "hyperpiesia," but is variously described by others as essential, primary or benign hypertension. It is admitted that we have no exact knowledge of the cause or causes operating to produce a simple permanent high blood-pressure, nor of how long such a pressure takes to develop, tho we know from experience that it may develop quickly—in the course of a few weeks—as in a case of acute nephritis. We are aware that in its production certain factors appear to play a part, *e. g.*, excess of protein food, worry and any condition disturbing normal metabolism. We know that there is a relation between high blood-pressure and arteriosclerosis, tho the exact relationship has been the subject of much controversy. We are familiar with

the clinical fact that high pressure often precedes arteriosclerosis and that tho these two conditions are so frequently associated, arteriosclerosis does not necessarily cause high pressure. It is freely accepted that arteriosclerosis is in many cases due to the action of various toxins or infections, and notably syphilis. Probably most cases of hypertension are also essentially toxic in origin, the toxins exerting a vasoconstrictor action. On this basis the clinician should be on the outlook for oral sepsis or gastrointestinal stasis as a possible source. Where there is no obvious source of this kind, and no apparent cardiovascular or renal association, attention should be directed to the endocrine apparatus for evidence of disturbance of the normal balance. The thyroid, pituitary and gonads should be reviewed, as by some abnormality of function they may call for overaction of the adrenals, with which they act in close relation. The question of a suprarenal origin was formerly raised in connection with hypertension associated with nephritis, that a suprarenal hyperplasia with consequent increased production of a pressor element was the essential causal factor. Such an element is now known to emanate from the medullary portion of the adrenals, and a hyperplasia has been described by various writers as occurring, more especially in the chronic interstitial and subacute forms of nephritis. On this basis formerly several possible explanations were formulated, (1) that such hyperplasia is the cause of hypertension, but is independent of nephritis; (2) that such hyperplasia is the cause of hypertension, but is itself produced by nephritis; and (3) that the hyperplasia is a reaction to the chronic auto intoxication set up by the nephritis, along with hypertension, but not being the cause of it. The most rational explana-

tion would appear to be that in all cases the basal underlying cause is a toxemia, frequently alimentary, which in simple temporary cases of hypertension produces an adrenal response as evidenced by an increased activity, while in the organic type with permanent high pressure it produces in addition arteriosclerosis or nephritis, or both. If a toxemic origin be accepted to account for hypertension cases, the opposite condition, hypotension, might then be explained as the result of the absorption of toxins having a vasodilator action instead of vasoconstrictor.

The Clinical Manifestations of High Blood-pressure.—In this connection it is important to bear in mind that high blood-pressure is quite frequently found in the course of a routine examination in a vigorous subject who is quite unaware of any disability arising from that source. Such pressure is apparently in the nature of a compensatory process, and for the time being a beneficent one. Some patients come under observation as a result of a sharp hemorrhage which they are at a loss to explain. On inquiry the history may be elicited that a headache or giddiness preceded the bleeding, and was relieved by its onset. One old gentleman of a very vigorous and impulsive nature whom I have known for years to have a pressure constantly over 200, has at intervals a smart epistaxis or a sharp bleeding from the bowel. Following these happenings he feels much relieved and has for the time being greater activity. These occurrences must be regarded as akin to the action of a safety valve, whereby nature carries out a venesection for the reduction of pressure and so avoids a catastrophe. He is now over 80 years of age and, tho his power of locomotion is limited, he is still able to get about. A frequent

experience is that a patient seeks advice because of headache and giddiness and is found to have a high pressure, often with arteriosclerosis, with or without renal disease. The wise physician remembers that the palpable peripheral arteries are not always a true index of the condition of the cerebral vessels, and that tho the former may not show marked degeneration, the latter may be definitely sclerosed. Here a timely ophthalmoscopic examination of the fundus may give valuable diagnostic information in the discovery of "silver wire" arteries. Other cases come under medical care with failure of compensation, or with cardiovascular symptoms. In a narrow sense, the clinical manifestations of high pressure should only include those due to high pressure alone, but in the wider sense they must include the effects of arteriosclerosis. If so, then cerebral hemorrhage and thrombosis, angina pectoris, intermittent spasm of cerebral arteries and uremia from the small kidney of arteriosclerosis must find a place, tho they are really end-results. It is doubtful if, in the absence of arterial disease, high pressure ever causes cerebral hemorrhage. The highest pressures are found in association with chronic interstitial nephritis. In one case, that of a powerfully built blacksmith, the systolic pressure for some time before his death from cerebral hemorrhage, remained in the neighborhood of 300 mm. Perhaps the most striking case in my own experience was that of a thin little girl of ten years of age, who was admitted to my ward on account of hematuria. The cause of the bleeding was not at first obvious and various lines of investigation were followed out from the diagnostic point of view. There was, of course, albuminuria, but little more than could be accounted for by the blood

present. The pulse was small and wiry and the systolic pressure (brachial) was recorded as 250 mm. Repeated observations confirmed this record, as over a period of a fortnight's residence the pressure varied between 220 and 250. A few granular tube casts were noted in the deposit. The diagnosis of chronic interstitial nephritis with a superposed acute exacerbation was made, despite the age, and several days later uremia ensued with convulsions and a fatal result. Post-mortem, the kidneys were found to be markedly sclerotic and the left ventricle of the heart enormously hypertrophied. Tho this is not the earliest age at which such a condition has been observed, it is, as far as I am aware, the highest blood-pressure recorded at that age. With reference to the compensatory nature of the high pressure which is so constant a feature of this azotemic type of nephritis, it would appear that a new normal level becomes established, at which, if the pressure can be stabilized, the patient continues to feel comfortable, while, if it varies appreciably above or below this level, discomforts of various kinds are experienced. One such illustrative case forms a striking example. A man of 46 years of age was admitted with a kidney condition of characteristic azotemic type and a systolic pressure of 180 or a little over. He had headache and giddiness as marked features. As a result of reducing treatment the pressure was gradually lowered until at or about 160 these symptoms eased off. Lowering treatment was continued and he experienced nausea and sickness and felt generally out of sorts. The pressure was allowed to rise and comfort was restored. The process was repeated more than once as a confirmatory observation with similar results.

The Prognostic Value of High Blood-pressure.—One point which must be emphasized at the outset is that records of blood-pressure must not be regarded too absolutely, as many patients carry on for years with a high systolic pressure, even of 200 or over, and an increased pulse pressure without obvious discomfort. Perhaps this is instanced most strikingly in the case of those who, in addition to the responsibility of a large business, undertake some form of public work. Their whole lives are spent at high pressure; as the saying has it, they "live on their nerves." It is a notable fact that many of these feel the call for some form of stimulation to enable them to put forth their best work. If the blood-pressure in such cases for some reason becomes lowered, they feel the reflex effect in diminished mental vigor. Experience has taught us that, after all, the actual systolic pressure is not of so much importance as the relation between systolic and diastolic pressure, *i.e.*, the pulse pressure. The common finding with a high systolic is a relatively low diastolic pressure, really indicative of an increased heart load. Normally the pulse pressure is approximately half the diastolic pressure, but in disease it may vary within wide limits. The greater the overload, the greater is the danger of myocardial exhaustion and cardiac failure. Where there is a high diastolic pressure, and consequently a lowered pulse pressure, the condition must be regarded as more immediately serious. This is often associated with the presence of arteriosclerosis, granular kidney and the danger of cerebral hemorrhage. In chronic interstitial nephritis a steadily rising systolic pressure, despite care and treatment, is alarming; a stationary or falling pressure is more hopeful, at least for the immediate future, while

a sudden fall is to be regarded with suspicion as indicative probably of cardiac failure. In chronic nephritis often a uremic crisis can be foretold by a markedly rapid rise in pressure. Perhaps this is more easily recognized in the large white kidney than in the contracted, as then the hypertension is not so marked. In angina pectoris the pressure is usually high, and during the actual paroxysms may rise or fall, usually the former. In severe attacks, with great pallor and a low blood-pressure, the prognosis is grave.

Treatment.—In view of the fact already mentioned that some degree of high pressure is to be regarded as compensatory, and as the expression of some underlying condition, it must first be emphasized that the mere discovery of high pressure alone, without associated symptoms, should not be taken as an indication for its immediate reduction. Much harm may be done by the indiscriminate lowering of pressure, without due appreciation of the underlying cause. It is very difficult to lay down hard and fast lines as to when or how far it is justifiable to interfere, and this decision can only be founded on experience. Of course it will be obvious that the persistence of an abnormally high pressure, whatever be the cause, is associated with certain very definite and often immediate dangers. These are cerebral hemorrhage in some form, or cardiac failure. Here some line of treatment calculated to lower pressure for the time being is essential and should not be delayed, in order to lessen the strain on arteries and myocardium. Ordinarily it is more important, at least at the outset, to employ means to prevent its further rise if at all possible. The possible causal factor or factors in operation should be thoroly reviewed, and much may be done at this

stage by regulation of diet, bowels, and exercise. A course of judicious spa treatment at intervals may be of great service. On general lines the intake of food, and especially of fluids, should be restricted. Meats, if given, should be in strict moderation, indeed some cut them out altogether. No highly-seasoned or spiced foods should be allowed, and no alcohol or strong tea or coffee. The use of salt also some regard as harmful. Purgation is useful, more especially if drugs are chosen, which remove large quantities of fluid, such as calomel, jalap and elaterium, with morning salines. When there is evidence of cardiac distress complete rest in bed must be insisted upon, and this of itself usually lowers pressure temporarily, but for most cases what is required is relative rest. A moderate amount of exercise suited to the individual patient may be allowed, indeed should be encouraged. Mental and nervous overwork, like physical overexertion, should be avoided. This is, of course, easier to prescribe than it is to carry out. As a distraction from worry the patient should be encouraged to develop some quiet hobby. The most useful method of temporarily lowering pressure in a crisis, or where drugs fail, is venesection. Increased elimination by the skin and lungs is a valuable aid and can be secured by means of carefully regulated hot baths. The action of drugs, so far as lasting results are concerned, is uncertain. In any case it is never advisable to rush to vasodilators too early or to push them too strenuously, as some measure of high pressure is often a compensatory necessity. No drug can be claimed to have a specific action in this regard. For a sudden lowering effect probably amyl nitrite or nitroglycerine gives the best result, but the action is not sustained.

For continuous use in lowering pressure sodium nitrite is the drug which is in greatest favor and which, in my experience, gives the best results. The official dose is up to two grains, but frequently to get the desired effect it must be employed in larger dosage, say up to 3, 4 or even 5 grains several times daily. In this connection it may be of interest to narrate a recent experience. I saw a patient suffering from a chronic nephritis of the azotemic type, with his doctor, who served as resident physician in my wards some years ago. The patient had some dyspnea with slight edema in the feet and complained of headache and giddiness. His systolic pressure was 180 mm. and his diastolic 130. I advised the use of sodium nitrite, beginning with $1\frac{1}{2}$ -grain doses four times daily, combined with a diuretic. Finding this was beneficial the doctor gradually increased the daily dose until 30 grains were given in twenty-four hours. All the symptoms cleared up, the pressure fell to 130, and the patient was able to go about in comfort, and to proceed to the country for a holiday. The combination of sodium nitrite with a diuretic or diaphoretic is often of benefit in securing increased elimination. Occasionally it may be thought advisable to bolster up its action by the use of a nitroglycerine or trinitrin tabloid at night in addition, and this is often valuable in such cases in securing sleep. Erythrol tetranitrate ($\frac{1}{2}$ to 1 grain or more) and mannitol nitrate (1 grain or more) are both recommended as having more lasting effects. Perhaps the latter has the greater claim and it has the additional advantage of being cheaper than the erythrol preparation. Achard, of Chicago, speaks highly of veratrine and mistletoe as useful for sustained action in lowering pressure. Of the former I have little experi-

ence in this respect, as it is dangerously depressant, and thus unsuitable for use in general practice. I have employed guipsine at times both for this purpose and as a diuretic, without satisfactory results. Potassium iodide is also in regular use for lowering pressure and seems to give its best results when used in small doses over long periods, with short intervals of rest now and again. Certainly it appears to exercise its most beneficial effects in cases where there is arteriosclerosis of syphilitic origin. It is important to remember that, even in the presence of high pressure, where formerly its use was regarded as contraindicated, digitalis has been tried safely and with benefit in cases where there was danger of cardiac failure. The use of high-frequency currents has in some quarters been strongly advocated for the lowering of pressure. Snow, of New York, wrote strongly in their favor, but others have stated that such currents have no lasting effects in patients with persistently high pressure. Some years ago I made an extensive trial of this method without success, tho often the patients felt temporary benefit. Based on the idea that some degree of adrenal hyperplasia is constantly

present in cases of hypertension, various writers (Zimmern, Cottenot, Sergent and others) have employed a new therapeutic measure in an attempt to inhibit the action of the glands by radiotherapy. Tho so far the use of this method has been very limited, some good results have been claimed. The importance of the discovery of high blood-pressure at the earliest possible moment cannot be too strongly emphasized, so that suitable steps may be taken to cope with it before changes become marked in the heart, vessels or kidneys. Here, as in other diseases, prophylaxis is the best treatment, and in these days of advance in preventive medicine there is here abundant opportunity for its practice. Preventive measures must begin with the education of the lay public on the dangers arising from increased pressure. As they become alive to these dangers more will seek an occasional overhaul from this point of view. Without any desire to figure unduly as an alarmist, one might suggest that if more people on the shady side of 40 presented themselves for pressure observations at intervals, many of the tragedies which we meet with in daily practice might be averted by timely interference.



THE SURGEON NOT A MERE TECHNICIAN.

The surgeon must never permit himself to be relegated to the sphere of a mere technician. This danger, we know, has existed, due largely to the rapid perfection of surgical technic, and perhaps is not entirely past, altho many, who are operators by choice, have turned to the paths of a broader surgical science. Operative surgery is purely mechanical, but when, where and why to operate is the duty belonging to a broader man than a technician.—Dr. F. C. Herrick (Ohio State Med. Jour.).

FAULTY DIET AND INTESTINAL STASIS IN RELATION TO HIGH BLOOD-PRESSURE.

BY

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Three men are, in my opinion, doing great and good work for the Science and Art of Medicine.

1. Colonel McCarrison is showing the evil results of faulty diet—a very old and supposedly commonplace subject—in language both terse and interesting.

2. Sir Arbuthnot Lane is investigating the evil results of chronic intestinal stasis, and describing them clearly.

3. Sir James Mackenzie is teaching us much about early ailments, and the importance of treating them before they become chronic and organic.

In this paper high blood-pressure, or hyperpiesia, will be considered as a symptom, and it will be supposed that there is a close relationship between it and intestinal toxemia and with it the vast subject of digestion and assimilation.

Colonel McCarrison wrote a very interesting paper on a subject over 2,000 years old, "Faulty Food" (*J. A. M. A.*), in which he referred especially to the evils resulting from faulty and ill-balanced diets. In attempting to illustrate what he means we shall make some reference to calories and vitamins.

A general practitioner may have some difficulty in deciding as to the daily amounts of the nitrogenous, the sweet, the fatty, the starchy, and the liquid foods required for a healthy adult. If, however, he will consider that six ounces of butchers' meat per day is sufficient to renew the ordinary waste of muscular tissue, and that only 20-30 ounces of butter, bread, potatoes, greens,

sugar, etc., will suffice for the various operations of the human economy, as represented by heat and force, he will not be likely to go far wrong. He will scarcely prescribe three meat meals a day for a patient with high blood-pressure caused by some form of toxemia.

We think the simplest and best way to estimate food values is by the use of the term calories. We are told, perhaps correctly, that a calorie represents energy, not nutrition, but it suits our purposes very well.

A calory or calorie is determined by using a calorimeter with two chambers, the inner containing the dry food to be burned, and an outer which is filled with water. The food is ignited with an electric connection and burned. This heat is transferred to the water, which then indicates the heat-producing power of the food—a calorie.

Accepting the simplest classification of foods we find the following fuel values.

One gram of proteins is equal to 4 calories.

One gram of carbohydrates (starches and sugars) is equal to 4 calories.

One gram of fats is equal to 9 calories.

It has been generally understood for some time that each healthy adult requires 3,000 calories per day, but we shall endeavor to demonstrate that, as Professor Chittenden of Yale has told us, such estimate is too high. But in the meantime we may take that as a basis, and consider proportions, which would be for one day as follows:

Protein (meat, milk, cheese, eggs, etc.)	10%— 300 calories.
Carbohydrates (starches and sugars)	65%—1,950 calories.
Fats	25%— 750 calories.

Some of our young friends, after taking their excellent courses in dietetics have decided that we should think and talk in calories about our foods, and instead of saying one slice of bread or a piece of pie, we

should say 100 calories of bread or 350 calories of pie. We have not yet adopted that custom in Toronto.

The approximate calorie values of certain common foods will be given by way of illustration. The amount in each case will be "one serving"—the quantity usually given at a meal:

Bread, 100; candy, 125; marmalade or honey, 100; oatmeal, 60; shredded wheat, 100; butter, 120; cheese, 80; cream, 100; skimmed milk, 80; whole milk, 160; eggs, 100; codfish or perch, 100; apples, 75; bananas, 150; grapefruit or oranges, 100; raspberries or strawberries, 40; ice cream, 200; roast beef, 300; steak, 200; roast lamb, 200; bacon, 300; ham, 200; sausage, 250; chicken, 160; duck, 250; goose, 300; turkey, 220; lobster, 90; oyster, 45; nuts, almonds, 100; Brazil, 400.

It will be noticed that meats, milk, cheese, butter and sugar rank high in their food values. It may also be stated that their calorie equivalents show fairly well and correctly the comparative values of the foods.

Let us consider a few diet tables having regard to quality, balance and quantity. A diet may be faulty with the best foods if there is lack of balance, and quantity greater than the digestive organs can assimilate. When one considers high blood-pressure he naturally thinks of arteriosclerosis in connection therewith, but we shall say very little as to etiology, pathology or medical treatment. Clinical observation, however, has induced me to think that heredity bulks largely as a cause, and when it does the difficulties of prevention and cure are greatly increased.

Two diet lists from Lakeside Hospital, Cleveland, one day only in each week, will illustrate certain points (*Friedenwald & Rulrah*).

1. Doctors.

Breakfast: Fruit, oatmeal and cream, bacon and eggs, potato, rolls, toast, coffee, milk.

Luncheon: Clam chowder, potato, cold meat, doughnuts and cheese, tea, milk.

Dinner: Soup, roast beef, potato, spaghetti, olives, lettuce, ice cream, crackers and cheese, cake, coffee, milk.

2. Nurses.

Breakfast: Oatmeal and cream, broiled ham, potato, rolls, toast, coffee, cocoa.

Luncheon: Cold meat, horseradish sauce, potato, banana fritters and maple syrup, tea, milk.

Dinner: Soup, braised beef, potato, hot slaw, caramel ice cream, cake, coffee.

This hospital was selected simply because, in a general way, we have a high opinion of Cleveland, its hospitals, and its doctors. The meals for the house-doctors and nurses are faulty in two ways: 1. Badly balanced, especially in the excess of proteins. 2. Quantity too large, amounting altogether to 700 or 800 calories more than the ordinary maximum requirement. The doctors and nurses going from that hospital would know but little about the virtues of temperance in eating. It makes us think of the perplexities caused in the mind of H. G. Wells who spent Thanksgiving Day in New York in 1921. He said the portions they give you in hotels and clubs are enormous. One seems always to be eating little bits and throwing the rest away. No. 2 diet for nurses is good, but not well balanced because it contains three meat meals, *i. e.*, three dinners.

Home for Incurables, Toronto.

Breakfast: Orange or grapefruit or other fruit, cereal (oatmeal, cornmeal, cream of wheat or shredded wheat), toast or bread, butter, egg or jam, tea or coffee or milk.

Dinner: Soup (cream of corn or pea or tomato or potato or chicken), meat—generally roasted or broiled, potato, spinach or carrots or turnip or cabbage or celery, fish occasionally. Dessert—

rice or sago or cornstarch or custard or baked apple or apple sauce or rhubarb or pie.

Supper: A little cold meat, apple sauce or other fruit cooked or preserved, bread, butter, cream, tea or coffee, milk.

This list, tho far from complete in all details, indicates fairly well the aims of Miss Coulter, the dietitian who carefully watches effects, makes changes to suit the seasons, and in individual cases endeavors to detect the idiosyncrasies and treat them circumspectly. Formerly the combination, known as "macaroni and cheese" was included, and was well liked as a rule, but Miss Coulter found it disagreed with so many that she deleted it entirely.

A careful examination of this dietary will show many good points. It is well balanced, and yet sufficiently elastic to allow changes to suit personal idiosyncrasies without seriously disturbing the general equilibrium. The fuel value per day according to figures given by Miss Coulter are: Breakfast 450, dinner 650, supper 500, altogether 1,600 calories. The single helpings are generally small, meats 3 to 4 ounces. The quantity per day much less than that in the other diets of the Cleveland three dinner meals before mentioned, and yet these meals in the home are prepared, not for bed-ridden invalids, but for men and women who are out in the open air a good portion of the day, and are supposed to have healthy digestive organs.

That peculiar thing which is designated arteriosclerosis in which hardening of the arteries is only one of the conditions existing, inasmuch as there are also other faults in various organs, perhaps, in fact, in all the cells of the body. For our purposes we may consider that in arteriosclerosis the body is sick *all the way thru*, this general faulty condition being due chiefly to intestinal toxemia which is preventable in a

large majority of cases.

Miss Coulter's dietary would be suitable for high blood-pressure. Dr. Rudolf of Toronto who has studied the subject carefully, with considerable research work, would perhaps delete the butchers' meat entirely. One might try a complete exclusion of the meat in certain cases with benefit, but to make such exclusion an absolute rule might do more harm than good. If 13 ounces are harmful it does not follow that 3 ounces will not be beneficial.

One may say the discipline in an institution like the home is such that rules can be carried out in a way that is not possible in private practice. That may be true in many cases, and of course we have to acknowledge that the physician is beset with many difficulties. For instance, the fat man or the fat woman is frequently the most unmanageable creature that is allowed to exist. We find some physicians have greater power of control over their patients than others, but how they acquire it we shall not attempt to explain.

No diet list will exactly suit any two people. The peculiarities or idiosyncrasies of individuals should always be considered and carefully studied. For instance, Sir Hale White found two people in whom rice caused a tingling erythema, in some others, oranges caused severe indigestion. Food peculiarities reported by others are countless. Eggs disagree with a surprisingly large proportion of people. One lady could not take them in any form. On one occasion she ate some cake after being assured that it contained no egg. The result was violent vomiting and purging, when it was found a mistake had been made as the cake did contain eggs. In one woman a single strawberry gave rise to much erythema of the face; in another, mutton in any form caused vomiting and diarrhea. One of my

own patients, a healthy, strong, young man, cannot eat celery, corn, cheese or chicken; another healthy young woman cannot take veal because it causes erythema of the face. A physician aged 60, a very vigorous man, always had severe urticaria within half an hour after eating the smallest piece of cheese. He had been thus affected for forty years, was very fond of cheese, always hoped the urticaria habit would disappear and every two or three years he repeated his attempts with no change in results. When I last saw him ten years ago, a small piece about one-half inch square, had caused within fifteen minutes both urticaria and serious indigestion, and he told me he would never try it again.

Milk is one of the uncertain foods. Young children can generally take it with decided benefit. Young adults and the middle-aged cannot take it so well. The aged can take it better. A statement formerly made about the House of Industry, Toronto, may be repeated. If one of the old people gets bilious and generally miserable pure milk is given to him, about three pints a day, and continued as long as he wishes. He usually likes it and improves from day to day for six or seven days when he commences to crave for other food which is given to him as he wishes until he gradually comes back to his old régime. Seldom does any one desire to continue on exclusive milk longer than a week.

A man's food idiosyncrasies are sometimes so numerous that the choice of a well-balanced dietary becomes difficult.

Our old friend, Count Cornaro of Venice, so often talked about, born in 1466, was delicate at 40, and then commenced to study carefully his idiosyncrasies and capacities for different foods, and it took about thirty years to make his choice of dietary. According to his own story he gradually found

that one thing after another disagreed with him until he discarded "Cold wines, melons and other fruits, salad, fish, pork, tarts, garden stuff, pastry and the like." Then he lived in good health for another thirty years, when without getting sick he simply ceased to live, or as the historian tells us, "he died at Padua without any agony, sitting in an elbow-chair, being above one hundred years old."

Both quality and quantity in his diet are worthy of careful consideration. He ate neither fruits nor green vegetables; therefore his diet was ill-balanced. The quantity per day was twelve ounces or about 1,000 calories, which he could not exceed with safety; the all-important feature was moderation.

Vitamines are bodies of unknown nature, so far as their chemical composition is concerned. They are termed accessory factors and they are in some way not yet explained necessary for healthy nutrition. Their absence in foods produces *deficiency* diseases; but these are so few in number and of such a nature (rickets, beri-beri, scurvy and pellagra) that we shall not now consider them in detail chiefly because they are found in all mixed (even tho not perfectly balanced) diet in sufficient quantities for practical purposes.

One of my patients, aged now 40, had slightly increased blood-pressure at times with disturbances of the gastrointestinal tract, for which Dr. Tovell could find no adequate cause by X-ray examination. Placed him on following dietary: *Breakfast*: fruit, cereals, toast, butter and tea; *dinner*: meat, potatoes, vegetables, greens and water; did not take turnips or cabbage because both disagreed with him; *supper*: one egg or cheese or canned salmon or canned sardines, bread and butter and cooked or preserved fruit. Has been on

this diet now nearly a year, has gained in health and strength, feels better than he did for years before, keeps constantly at work as foreman in a lithograph factory except when he goes away for a holiday in summer. His total intake is about 1,600 calories per day, and he has no desire to make any change. I have several other patients using similar diet lists, and mostly, if not always, with satisfactory results. Slight changes are made occasionally as occasion arises, but my aim always is to keep to these proportions as nearly as possible.

It is often difficult to limit sufficiently the quantity of proteins and especially butchers' meat. People think quite correctly that meats, milk, cheese, eggs, fish, dried peas, beans, nuts and cereals are so *nourishing* that they should be taken in quantities sufficient to build up and keep up the bodily strength. If one explains that, these foods are of supreme importance but that only a limited amount is necessary. Take, for instance, butchers' meat which up to a certain extent is both digestible and nutritious, but only a limited amount can be digested and assimilated. After the intake of the quantity that can be digested and absorbed any additional amount is both useless and dangerous because putrefaction takes place, and this causes the formation of noxious substances which are absorbed, and poison the system to a greater or lesser extent. The bio-chemists say this is due to the ingestion of a superabundant amount of nitrogen which cannot be safely stored, and necessitates a strain upon the excretory system, especially the kidneys, tho I think it is now pretty generally conceded that the poisons thus created go far past the kidneys.

One of the main objects in this paper is to show the importance of a proper balance in foods, and the admirable dietary of the

Home for Incurables may be considered an illustration of what can be accomplished in this direction. Also an attempt has been made to indicate how diet lists may be changed to suit the circumstances. Each individual case presents a problem, often complex, which should be carefully studied.

May we hope, however, that no one will infer from the teaching of McCarrison and others that quality and balance are everything in the selection and arrangement of foods in our diet tables. The importance of these considerations was recognized many centuries ago, and very few of the gifted and earnest men who are now throwing new light on an old subject wish to convey the idea that quantity is of little consequence. They generally agree as to the vast importance of moderation in eating. It is remarkable that an undoubtedly good physician should make use of the following statement: "For the person with symptoms of high tension the diet must be very strict as to what is eaten, tho the quantity need not be limited." From our standpoint it may be asserted, that, if there is any difference as to comparative degree, moderation or limitation of quantity is more important than quality and balance.

In speaking of calories we referred to the commonly accepted belief that 3,000 calories per day was the proper amount. It was stated that Professor Chittenden considered that estimate excessive. My desire in referring to different diet lists has been to demonstrate that smaller proportions would suffice, and at the same time accomplish more good in maintaining health and strength. I should say, 2,000 calories per day as follows: Breakfast 400, luncheon or supper 600, dinner 1,000. Would that suit everybody? No; 500, 600 and 900 would suit some better. That is one of the details to be carefully considered; and with

that study, also quality and balance.

But says one: "I don't want to start out for a heavy day's work 'on an empty stomach'." So he fortifies himself by taking some fruit, porridge, ham and eggs, bread and butter, marmalade and two cups of coffee with an energy value of 1,000 calories. What good will he get of that for his day's work?

The food passes thru the cardiac orifice of the stomach and collects and rests in the fundus, forming a good-sized lump of a very nutritious character. This mass is attacked by a pint or more of gastric juice (there being one or two gallons secreted in 24 hours). As the outer parts are dissolved or softened they are gradually pressed towards the pylorus, the sphincter of which relaxes to allow a little spurt of food into the duodenum, and then tightens to prevent a back flow into the stomach. From certain causes the pylorus ceases to relax and the spasm may prevent the stomach from being emptied for a time, resulting in fermentation, "gas in stomach," with perhaps eructations, heart-burn, nausea, sense of fulness, discomfort, pain, etc. These are supposed to be the ordinary signs of indigestion. Without them there is no indigestion. After they have ceased, digestion has become normal.

It happens that such ideas are wrong in many respects. There has been little digestion of any sort, and probably none of the ham and eggs. But the foods in the stomach have been changed into a soft pultaceous material called chyme. This is digested almost entirely in the small intestine, tho a small part of the process must be completed in the large intestine. It happens, unfortunately, that in a large proportion of cases the process is not satisfactorily performed. Putrefaction takes place, and that serious condition known as intestinal

toxemia is produced largely due to chronic intestinal stasis, concerning which Sir Arbuthnot Lane has taught us so much.

No attempt will be made now to discuss the actual treatment of this condition, but it may be stated that the number of ailments produced by the general poisoning of the system caused by the stasis is large and such ailments require careful attention. Sir James Mackenzie is teaching many valuable lessons. Let us study these and learn from them what we can.

THE BLOOD-PRESSURE IN BOYS AND GIRLS BEFORE AND AT PUBERTY, AND IN CHILDREN WHO SUFFER FROM VARIOUS DISEASES.

BY

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Volumes have been written upon the blood-pressure as applied to adults, but this subject has practically been ignored by writers on children's diseases. Even in the most advanced works there has been nothing written on this subject. In an adult the blood-pressure depends mostly upon three factors: *First*, the force or muscular power of the cardiac walls. *Secondly*, the resistance of the arterial coats. This condition may be produced by such diseases as nephritis or any cause which produces a diseased condition of the arterial walls. *Thirdly*, the age. In the child many more points must be taken into consideration. The force, or muscular power of the myocardium is the all-important factor, the force as a rule increasing with age. We look for a much higher systolic pressure in a child of ten years of age than in a child

of five years. However, this rule does not hold true in all cases. A child's blood-pressure is influenced by emotional causes, such as laughing or crying, also by certain conditions which modify the tone of the heart muscle. In such febrile conditions as scarlet fever, diphtheria, pneumonia, whooping-cough and in rheumatic myocarditis, we find the blood-pressure either raised or lowered. A child's systolic pressure is readily disturbed by exercise, excitement, a full meal, etc. Another point of importance is that the blood-pressure as a rule is higher in keen, sensitive, clever, thin children, than in stout, phlegmatic children. I have made a study of blood-pressure in children for many years past, and I have arrived at some interesting conclusions. No two children are alike, and we cannot say that any two children of the same age will have the same systolic pressure. You will see a large, stout boy of ten years of age, and you expect to find a systolic pressure of fully 100 or over, and you will be surprised to find that his pressure will only register about 85 to 90. Again, you may examine a thin lad of the same age and get a systolic pressure of 100 or over. I place very little value upon the diastolic pressure in a child, as it varies immensely in different children of the same age. For instance, in some children the diastolic pressure will run to a very low level, even as low as 10. This depends largely upon the marked distensibility of the arterial coats in the child. As a rule the difference between the systolic and the diastolic pressure in a child is 30 to 35 points, but I have found a healthy child of six years of age with a systolic pressure of 85 and a diastolic pressure of 10. Another child who suffered from enuresis had a systolic pressure of 90 and a diastolic pressure of 20. Another healthy girl has

a systolic pressure of 85 and a diastolic pressure of 40.

The first part of the subject which I shall deal with will be blood-pressure as applied to boys and girls as they approach puberty, and at this important period of their existence I may state at the outset that there is a marked difference between boys and girls in regard to blood-pressure at this time of life. We all know that there is a marked difference in the development of boys and girls at puberty and, further, that there is a considerable difference in the development of different girls at this period. We say, how rapidly your boy is growing, but, on the other hand, we say how your daughter is developing. These terms mean much. A boy grows and we notice the gradual emerging of boyhood into manhood. In a girl it is quite different. As a rule, she appears to jump from girlhood into womanhood. We notice a wonderful difference in the development of a young girl in six months' time. She has been developing fully two years before she reaches puberty, but we appear only to notice the sudden transition. For fully two years, as a rule, before the advent of puberty we notice the change in the breasts. They develop slowly and gradually. The uterus undergoes the same gradual enlargement. The hips and the legs rapidly increase in size. The endocrine glands take their part in this development, and glands which a short time before this took only a small part in the young girl's life, now take an active part and pour out their secretions into the blood current. At this time it is interesting to note the important changes which take place in the circulatory system. The heart muscle becomes hypertrophied, and we note the gradual extension of the apex to the nipple line, and in some instances it may beat slightly outside of this line. At the

same time we find a thumping, loud second sound at the base, and this said sound is quite loud over the sternum and appears to be nearer to the surface than it was one year ago. All parts of the heart take place in this hypertrophy. We are not dealing with an abnormal condition, but with a normal physiologic development. More work is placed upon the myocardium, and it has to increase in size in order to keep pace with the extra work that it is called upon to do. If this condition continued for some time after puberty, we would be dealing with an abnormal condition, and would look for some active trouble somewhere in the young girl's anatomy. However, this state of hypertrophy does not persist, and in a couple of months after puberty the heart takes on the adult size and shape, and the apex-beat is found to be one-half to three quarters of an inch inside the nipple line. These plus pressure signs in the heart muscle led me to believe that we must be dealing with an increase of blood-pressure in the young girls. On taking the blood-pressure in the young girls before puberty I was not disappointed, and found many peculiar conditions.

I may state that my observations on this subject started some twelve years ago. I shall now report several of these cases which have been taken from my notes on heart conditions in the year 1911.

Case 1.—On April 5, 1911, I examined L. C., aged 13 years. She was approaching puberty. An examination of the heart at that time revealed the following: The apex was in the nipple line, and the second basic sound was plus. The systolic blood-pressure, which was confirmed by a brother practitioner, was 134. On May 4 it was 139. She menstruated in July of that year, and on September 11 her blood-pressure had fallen and the apex-beat was inside the nipple line.

Case 2.—R. H., aged 15, had started to develop, her breasts were enlarging, apex in

the nipple line, and blood-pressure 124.

Case 3.—R. D., aged 12, was approaching puberty. She was a large, well-developed girl. The apex was in the nipple line; the second sound at the base was much accentuated, and the blood-pressure was 124.

Case 4.—R. H., the gradual increase of blood-pressure was well exemplified in this girl. She was rapidly reaching puberty. The breasts were quite large, and the girl was well developed. On March 15, 1911, the blood pressure was 134; on April 21, 1911, the blood pressure was 136. The apex-beat was in the nipple line, and the second sound of the base was plus.

Case 5.—E. M. and D. M. are sisters. They show no signs of puberty. The former is 13 years and her systolic blood-pressure is 103. Doris, who is 11 years old, has a blood-pressure of 98.

Case 6.—Helen A., aged 14 years on March 15, 1911. I found the following condition: A large, well-developed girl who is approaching puberty. Her breasts are quite large, the apex in the nipple line, and the second sound at the base accentuated. The systolic blood-pressure is 123. On March 17, two days later, she menstruated, and the blood-pressure dropped to 115, and the second basic sound had lost its loud ring.

Case 7.—D. McT., was examined by me on January 24, 1911. She was a weak, nervous child. The apex was on the nipple line, and the second sound at the base was accentuated. On February 28, the blood-pressure was 138.

Case 8.—On February 24, 1911, M. McG. was examined at my clinic, and the apex was a little outside the nipple line. The second sound at the base was accentuated, and the blood-pressure was 145. On April 19 it was 141.

Case 9.—E. M. was examined on March 3, 1911. The girl was 13 years of age and well developed. The apex was in the nipple line, and the second basic sound was plus. The blood-pressure was 125. She menstruated about six days later, and the blood-pressure fell to 115.

Case 10.—Irene M., aged 15 years, was fairly developed; apex was in the nipple line, and the second sound was accentuated, with blood-pressure at 122. Two months later it was 125.

Case 11.—L. O'B. was nearing puberty. Her blood-pressure was 130.

Case 12.—On February 7, 1911, Margaret D. was examined when she was 13 years old and I found the following condition: This girl was approaching puberty. The apex was a little outside the nipple line, the basic second sound was much accentuated, the systolic blood-pressure ranged from 124 to 132; she menstruated on April 18, when the blood-pressure fell to 118.

I have many other cases where the notes point to a blood-pressure of from 122 to 132, and yet there were other little girls who were approaching puberty and the blood-pressure was quite low, ranging from 110 to 115. At that time I took the blood-pressure of a young girl of 12 years and 9 months who was approaching puberty. The apex was in the nipple line, the second sound at the base was plus, and the blood-pressure was 130. At this time I took the blood-pressure of her mother, who was a healthy young woman of 34 years, and her blood-pressure was 120.

Polly C., aged 13, had the same cardiac signs as the other patients, and her blood-pressure was 144.

I will now mention the results of cases which I have examined during the past few weeks, and I must say that they correspond favorably with those of twelve years ago. I took the blood-pressure of six young girls this evening (May 24, 1923).

Case 1.—Eileen McK., aged 12 years, will reach puberty in about one year's time. The apex is in the nipple line; the second sound at the base is accentuated, and her systolic blood-pressure is 128.

Case 2.—Elsie F., aged 13 years, is approaching puberty. Her blood-pressure is 138.

Case 3.—Elsie S., aged 14 years, is quite developed, but has not menstruated as yet. Blood-pressure is 144.

Case 4.—B. McK., sister to Eileen, is about one year older and much more developed than Eileen. Blood-pressure is 138.

Case 5.—Marjorie C., aged 12 years, has not yet started to develop, but her blood-pressure is 112.

Case 6.—Annie C., aged 9 years, has a blood-pressure of 98, which is the normal blood-pressure for one of her years.

I endeavored to obtain the blood-pressure

of these six little girls while standing, after exercise and on lying down. This table will demonstrate conclusively the condition of the blood-pressure during the various attitudes.

Cases.	Standing.	After exercises.	Lying down.
1.	128	138	122
2.	138	150	125
3.	144	138	125
4.	138	152	122
5.	112	122	92
6.	98	112	82

It may be observed that this slight amount of exercise in girls who are approaching puberty will raise the blood-pressure considerably.

Little girls of 11 years and 6 months who show no signs of commencing puberty have a blood-pressure of from 100 to 105.

I examined a young girl two or three days ago who had but commenced to develop. She was 11 years and 6 months old, and suffered from chorea and bronchitis, and her systolic blood-pressure was 140.

Alice C., who has a pulmonary obstructive murmur and is approaching puberty, and is 14 years of age, has a blood-pressure of 123. Another girl of some ten years who has a pulmonary obstructive murmur, has a blood-pressure of 128. Margery G., a young girl of 11, who is well developed and close to puberty, has a blood-pressure of 139.

I have taken the blood-pressure of a large number of young girls 15 to 16 years of age and who have passed puberty some months ago. The blood-pressure as a rule I found to be 115 to 116. I found a few girls at this age whose arteries were somewhat thickened, and the systolic blood-pressure rose from 130 to 140.

I think that I have quoted sufficient instances to demonstrate the fact that in young girls ranging from 11½ to 14 years years of age that the blood-pressure increases progressively until they reach puberty and, further, that when menstruation is well established the blood-pressure falls to around 116. I have also shown that the left ventricle progressively enlarges, and that we have an accentuated second sound at the base. All this points to a plus tension. This is confirmed by taking the blood-pressure.

I will now devote some space to the question of blood-pressure in young girls who suffer from one or other form of cardiac disease. Now, the question arises as to what is gained in the taking of the blood-pressure of young girls before and at puberty. I have already stated that the heart muscle in a young girl at this period of her life is working at a plus pressure. A strain is progressively or suddenly put upon this heart muscle to which it has never been subjected before and never will be again unless some organic disease takes place in itself or some other organ which demands a plus pressure. We may ask, should a young girl at this age have her exercises curtailed. I think not, but they should be taken in moderation. We have seen how, with a small amount of exercise, that the systolic blood-pressure rises to 150 or over. We have also seen that at this time in a young girl's life who suffers from cardiac disease that the blood-pressure is increased. In these cases, compensation is readily broken down—in other words, a damaged heart is trying to keep pace with a normal heart, and is working overtime. It cannot be done, and this little girl should be carefully watched. She should have extra care, and her heart should be very carefully and frequently examined until she tides over this plus pressure period. After menstruation is well established, she may take more liberty. In a young girl possessing a normal heart to back her up, she can practically take any exercise she wishes.

Let me now take up the boy question. The heart does not enlarge in the same manner as that of girls of the same age, and the second sound does not possess the same ringing character at the base. Consequently we do not get much if any increase in boys of this age. I will instance a few cases.

Case 1.—B. V., aged 14, is a stout, powerful lad, and his blood-pressure is but 108, while his thin younger sister has a blood-pressure of 121.

Case 2.—D. G., 16 years of age, is a tall, well-made boy; his blood-pressure is but 108. His younger brother of 14 years of age has a blood-pressure of 90.

Case 3.—William D. is a stout, well-developed lad of some 13 years. His systolic blood-pressure is 103, and the apex is

half an inch inside the nipple line.

Case 4.—E. B., aged 14, is a strong young athletic chap, and his blood-pressure is only 93.

Case 5.—Sydney V. is a young boy of 11 years of age, whose apex is one-half inch inside the nipple line, and his blood-pressure is but 92.

If we compare the condition of these boys with that of girls of the same age, we can readily see the marked difference in the condition of the heart and the blood-pressure.

Since starting this paper I examined a young girl of 13 years of age who is approaching puberty, and her systolic blood-pressure is 140.

I have taken the blood-pressure of many boys and girls suffering from the different forms of cardiac disease, also in cases of pneumonia, diphtheria, whooping-cough, febrile conditions, pulmonary tuberculosis, etc.

Blood-pressure in Abnormal Heart Conditions.

I shall first of all refer to the blood-pressure in children who suffer from myocarditis. In these children we find a soft systolic murmur at the apex, the left ventricle being dilated to the left for at least half an inch. The second sound at the base was slightly increased in intensity. Here we are dealing with a toxemia of the myocardium, which is generally rheumatic in origin. In this case we are dealing mostly with a dilatation and not with a hypertrophy of the muscle. In fact, hypertrophy has not had time to develop in the acute cases of these myocarditis. The blood-pressure in this instance is lowered. In valvular diseases of the heart we are not dealing with a functional condition, but an organic lesion of the heart exists. Let us take, for instance, mitral regurgitation, in which condition we find a hypertrophy of the heart muscle, the apex being in the nipple line or outside, and we get a ringing second sound at the base. In this case we have a marked increase in blood-pressure. In most cases of endocarditis where we have good compensation, and in many cases where nature has been extravagant and has produced more and better cardiac muscle than is required, we have a marked increase of the systolic blood-pressure. I will mention a few cases

of children who are and have been under my care, and who suffer from mitral endocarditis. I may mention here that the average systolic blood-pressure for a young girl of 16 years is 116, and the diastolic pressure is about 80 to 85.

Case 1.—A. F. is a young girl of some 16 years who suffers from mitral disease. I might say that this condition causes her no distress or worry of any kind. On examination I find a well-marked systolic murmur at the apex which is in the nipple line. (I have had this child under observation for a considerable time, and this trouble dates back fully two years.) Compensation is good, but it is out of proportion to the obstruction. The result is that the systolic blood-pressure is 140, while that of her sister, who is 20 years of age, is 116.

Case 2.—W. B., aged 6 years, who has a marked mitral disease, has a systolic pressure of 85.

Case 3.—A short time ago I took the blood-pressure of a young woman of 19 years of age. She was thin and anemic. She had a well-marked mitral condition, the sounds were loud, and the apex was a little to the left of the nipple line, while her blood-pressure, which should have been between 116 and 120, was 141. There was good compensation, but too much muscle had been developed in the effort to overcome the obstructive lesion.

Case 4.—J. McD., aged 7 years, who suffers from endocarditis, has a loud systolic murmur at the apex, which is in the nipple line. He has good compensation, and his blood-pressure is 100.

Case 5.—R. F. is a healthy-looking young girl of 9 years of age, who presents a loud systolic murmur at the pulmonary cartilage. It is either a congenital stenosis of the pulmonary orifice, or it may be an acquired pulmonary obstructive murmur of rheumatic origin. The muscle of the heart is in a good tonic condition, and the heart is not enlarged. However, the systolic blood-pressure is 102.

Case 6.—D. B. is a thin, undeveloped girl of 12½ years, with a well-marked pulmonary or organic murmur, and a systolic blood-pressure of 108, and a diastolic of 65.

I have mentioned these heart cases to point out that the blood-pressure is not lowered, as one would anticipate, but that in

every instance where compensation is good that it is increased. Most of these children can enjoy life, and can enter into sports as well as children who possess sound hearts. And I may go further and state that these children who have a systolic blood-pressure which reaches the average for his or her age, and even is increased, are practically sound children and should not be considered as invalids. This observation all goes to prove the value of a blood-pressure record in children who suffer from cardiac disease.

Blood-pressure in Whooping-cough Cases.

In this disease the blood-pressure is increased while the child is at rest, and very much increased during the spasms. Out of a great many cases, space will permit me to instance but a few. I shall first mention, tho, the factors which increase the blood-pressure in whooping-cough. First, the engorged condition of the lungs from bronchitis, bronchopneumonia and from enlarged peribronchial and peritracheal glands; second, the deficient oxidation of the blood; and, third, the tremendous spasm, or rather epilepsy of the lung tissues. I dread treating this disease. The two main complications in whooping-cough are bronchopneumonia and convulsions. Convulsions in a child who suffers from whooping-cough is a serious complication. Many of the older children who develop convulsions recover completely, but many of the younger children and infants only take one convolution and never regain consciousness, dying in a few hours' time. I have not had the opportunity to have a post-mortem on these children. However, I am convinced that the comatose condition in these cases is caused by multiple hemorrhages into the cerebrum, and this conclusion is strengthened by the fact that I have taken the blood-pressure of several children who suffer from this dangerous disease during the resting stage and while the paroxysm was on. I found that the blood-pressure is enormously increased during the spasm and somewhat increased in the interval between the spasms.

I took the systolic blood-pressure of an infant of 13 months during a paroxysm of whooping-cough and it registered 110 systolic pressure. This pressure corresponds

to that of a boy of from 14 to 16 years of age. This child's brother, who is 23 months of age, has a systolic pressure of 80 while at rest, and a systolic pressure of 140 during the paroxysm. This is a pressure one would expect to find in an adult of 55 years of age. Another brother of some 6 years, who has the whooping-cough, during the rest period has a systolic pressure of 100. In another family I examined a little girl of 6 years of age who suffered from this disease, and between the attacks her systolic pressure was 120. During the attacks the little girl's blood-pressure rose to 200. I can readily imagine that with a blood-pressure of this enormous height that a vessel in the brain could readily rupture. In fact, this little one's eyes were much blood-shot from ruptured vessels. I can readily imagine that the minute vessels in the brain of so young a child could not stand such tremendous strain, and the vessel walls give way, and the child dies with all symptoms of compression of the brain.

Blood-pressure in Pneumonia in Children.

I may state that the blood-pressure is much increased in pneumonia in children during the active period, but that there is an enormous drop in the blood-pressure after the crisis. To illustrate, at the present time I am treating a young boy of 9 years of age who suffered from a toxic type of lobar pneumonia. His chart showed a temperature of 105, respirations of 45, and a pulse of 148. He had a marked delirium of four to five days. At this time his systolic pressure was 92, and after the crisis it fell to 58.

The Blood-pressure in Children Suffering From Diphtheria.

In this disease there is a marked change in blood-pressure. A few days ago I had under my care a young girl of about 15 years of age who was suffering from a severe attack of tonsillar diphtheria. She received 5,000 units of antitoxin immediately. The improvement was not rapid, so that she received 5,000 units more, and in a few days she quite recovered her usual health. Her normal blood-pressure was

116, and during convalescence was only 92. In pneumonia and in diphtheria the condition of the heart muscle as to its tonicity should be gleaned by the blood-pressure. In diphtheria during the convalescent period, if we have a low blood-pressure, the child must be kept at rest and in bed until the normal blood-pressure is reached. We all know how frequently sudden death occurs in diphtheria, and we are taught that it is due to some nerve condition, the same as obtains in paralysis of the palate, but I am inclined to believe that most of these sudden deaths are due to toxemia of the myocardium, and this will be noted by the low blood-pressure. The blood-pressure should be carefully watched during convalescence in every case of pneumonia and in diphtheria. Especially in these two diseases we should insist that the child remains in bed, and should not be allowed to sit up until the blood-pressure reaches the normal for a child of its age.

Many cases of sudden deaths which are due to cardiac muscle deficiency might have been avoided if we had waited until the cardiac walls had regained their tone and the toxins had been eliminated before allowing the child to leave its bed. The blood-pressure is increased in all febrile conditions. In toxic diarrhea where the temperature frequently runs to 105, we have an increased pressure, but as the child becomes weaker the pressure drops steadily. In ordinary diarrhea we have a low blood-pressure from the very first, and it drops lower as the blood becomes depleted of its serum, but the blood-pressure soon returns to its normal limit just as soon as the vessels become filled again and the myocardium has some resistance to overcome. It is interesting to watch the blood-pressure mounting up in these cases after a saline irrigation is given, and probably a pint of saline is poured into the empty vessels.

Conclusions.

I am certain that this paper will make tiresome reading, as I have had to mention many cases, or, rather, to relate a brief history in order to support my contentions.

The chief points of interest can be summarized as follows:

1st. That the taking of the blood-pressure in children is an important item to add to our method of examination. I would advise that in hospitals for children, that the blood-pressure should be carried out as a routine examination.

2nd. That the blood-pressure is raised progressively as a young girl approaches puberty; that the heart enlarges, especially the left ventricle, and the second sound at the base is accentuated.

3rd. In pneumonia and other febrile diseases, the blood-pressure is raised in the primary stage; but after the crisis in pneumonia, and during the beginning of convalescence in diphtheria, the blood-pressure is very much lowered.

4th. In whooping-cough, the blood-pressure is raised while the child is at rest, and enormously raised during the paroxysm.

The Doctor's Personality.—The cultivation of a bedside manner may, in the extreme, be an affectation; but personality and the attitude of the physician may mean the difference between life and death. To inspire groundless hope in a patient is criminal; but to give the patient a sense of your appreciation of his suffering, your hope for ultimate relief, and the feeling that you will do all that is possible, is but a natural justifiable and humane attitude. How much of all this does the student get in the medical curriculum or during his intern service? How coldly callous do many of our brilliant graduates appear? Modern graduates may wonder why the citizens of a community remain faithful to the "old fogy" doctor, as the old practitioner is termed, when they, with modern training and equipment, have so much to offer. A study of the methods of the old doctor and the application of many of them would mean greater success for the recent graduate.—Dr. I. S. Cutler in his address before the Annual Congress on Medical Education (*Jour. A. M. A.*, April 7, 1923).

THE RELATION OF THE THYROID TO HIGH BLOOD-PRESSURE.

BY

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The importance of cardiovascular symptoms in association with diseases of the thyroid gland has been recognized almost since the beginning of the recognition of diseases of this gland as separate entities. In the list of classical symptoms of the hyperthyroidism syndrome in particular, increased systolic blood-pressure and increased heart rate occupy a leading place. It becomes of importance, therefore, to establish definitely (1) whether or not increased blood-pressure is present only in cases of hyperthyroidism or whether it coexists with other pathologic conditions of the gland; (2) whether or not the increased blood-pressure and the cardiac symptoms are due directly to the action of the thyroid secretion; or (3) whether the increased thyroid secretion acts upon some other organ, the secretion of which in turn is responsible for the cardiovascular symptoms.

To this end we have made a study of the so-called "toxic adenomata" would seem cases which are classified as follows:

Hyperthyroidism	216
Adenoma with toxic symptoms	59
Adenoma without toxic symptoms	102
Simple goiter	123

The systolic and diastolic pressures and the percentile variations in systolic pressures are given in the accompanying tables. Discarding the cases under 15 years of age, the average pulse pressures are as follows:

Hyperthyroidism	66
Adenoma with toxic symptoms	62
Adenoma without toxic symptoms	45
Simple goiter	49

The marked similarity in the figures for the cases of frank hyperthyroidism and of the so-called "toxic adenomata" would seem to justify our contention that these two syndromes are, as far as management is concerned, to be considered as identical in character. Altho our classification differs from that of Plummer¹ and Taussig,² these findings are in general in accord with those reported by them in 1915 and 1916, respectively.

toxic symptoms even as compared with the pressure in cases of simple goiter. Further investigation on this point would be of interest. It is possible that the fact that some of the lowest pressures noted are in cases of fetal adenoma may in part explain this clinical observation.

During a comprehensive study of blood-pressure in my clinic some years ago, Dr. C. E. Ford noted that in certain cases in which a high blood-pressure was associated

AVERAGE BLOOD-PRESSURE IN DIFFERENT TYPES OF GOITER AT DIFFERENT AGE PERIODS.

Age	Hyper-thyroidism			Adenoma (Toxic)			Adenoma (Non-toxic)			Simple goiter		
	No.	Sys.	Dias.	No.	Sys.	Dias.	No.	Sys.	Dias.	No.	Sys.	Dias.
10-15	4	120	81	1	120	80	1	120	80	9	117	77
15-20	20	132	79	4	124	77	5	110	69	14	120	78
20-25	29	130	75	10	131	79	10	120	74	22	119	76
25-30	38	136	76	7	126	75	17	114	73	14	117	77
30-35	34	144	81	9	143	79	18	122	77	24	123	80
35-40	19	149	84	5	134	77	16	113	75	14	125	82
40-45	28	150	86	6	136	77	15	125	82	7	134	79
45-50	21	152	82	7	156	88	4	148	86	6	131	83
50-55	12	153	85	6	152	84	6	125	78	5	141	85
55-60	7	159	85	3	160	87	4	127	87	2	135	85
60-65	4	167	82				6	133	82	4	143	82
65-70				1	160	80				2	151	87

VARIATIONS IN SYSTOLIC PRESSURE.

(In percentages of total number of cases in each group.)

Systolic pressure	120 and under	115 and under	110 and under
Hyperthyroidism	13.4%	4.9%	2%
Adenoma—toxic	16.1	3.6	1.8
Adenoma—non-toxic	55.9	39.8	30.1
Simple goiter	48.6	15.1	10.1
Systolic pressure	140 and over	150 and over	160 and over
Hyperthyroidism	53.5%	32.7%	19.3%
Adenoma—toxic	41.1	28.6	16.1
Adenoma—non-toxic	9.7	3.2	2.1
Simple goiter	11.8	5.9	1.7

It was a surprise in this investigation to note the very low systolic pressure and low pulse pressure in cases of adenoma without

with a large goiter, which was sometimes but not always accompanied by symptoms of hyperthyroidism, a marked fall in blood-pressure followed operation.

It remains to consider what may be the cycle of events which leads to the correlation of variations of blood-pressure with variations of thyroid activity. We have repeatedly called attention to the fact that practically all of the symptoms of excessive thyroid activity are produced also by excessive activity of the adrenals, that is, adrenalin causes increased metabolism, increased thyroid activity, increased blood-pressure, increased pulse, increased respiration, leucocytosis, increased sweating, dilation of pupils, diversion of the blood to the surface, lowering of the threshold at the myoneural junction. We know also that in the absence of the thyroid gland this

¹Plummer, H. S., "Blood-pressure and Thyrotoxicosis," *Collected Papers of the Mayo Clinic*, 1917, 7, 448-455.

²Taussig, A. E., "Some Blood-pressure Phenomena in Exophthalmic Goiter," *Trans. Soc. Am. Phys.*, 1916, 31, 121.

syndrome of symptoms does not exist, that is, it is the secretion of the thyroid gland that sensitizes the tissues to adrenalin. If that secretion is increased the sensitization of the tissues to adrenalin is increased; if the thyroid secretion is decreased the response of the tissues to adrenalin is correspondingly decreased. Moreover, just as adrenalin increases thyroid activity, it is evident that increased thyroid activity not only increases the sensitization of the tissues to adrenalin, but increases also the activity of the adrenal glands so that more adrenalin is secreted.

It would appear, therefore, that possibly the prime index to the variation in thyroid activity is to be found in the variations in cardiovascular activity, to which the other manifestations which make up the picture must be related.

The correlation of hyperthyroidism and hyperadrenalinism in so far as the cardiovascular effects are concerned, is strongly evidenced also by the intimate relation of each to foreign protein activity. The necessity for the withdrawal of a high protein diet from patients with hyperthyroidism is well known, in fact, hyperthyroidism and cardiovascular diseases bear a close resemblance to each other and the successful treatment of each comprises as among its most important factors, rest and dietetic control.

We feel that this correlation of a high blood-pressure with hyperactivity of the thyroid gland is sufficiently well established to lead us to consider the possibility of the lessening of thyroid activity by the excision of the gland in certain cases of high blood-pressure and of myocarditis in which the only evidence of thyroid involvement aside from these two symptoms is the presence of a goiter. With increasing knowledge of the

relation of the thyroid gland to the adrenals and hence to variations in blood-pressure, it may be that in cases of high blood-pressure in which no other intermediate causative factor can be discovered such as a focal infection, disordered kidney function, etc., and in which no other evidence of increased thyroid activity exists, we shall remove the thyroid gland as a means of controlling the cardiovascular disturbance.

SOME CONSIDERATIONS UPON THE SUBJECT OF BLOOD-PRESSURE.

BY

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The popularization of instruments to record blood-pressure has constituted a decided advance in Internal Medicine, but it would seem that, to obtain full benefit from this, certain matters should be considered and, perhaps, emphasized. It is assumed that the sphygmomanometer is an instrument of precision as it should be. The instrument of the mercurial variety is generally accurate if properly calibrated and is not too old. The instruments should be standardized in the same way as are thermometers and they have about the same high register with age. The aneroid variety presents quite another problem. The "whip-lash" must be allowed for just as in the sphygmograph, altho the error is not so large. Many specimens are found to be from 10 to 15 millimeters in error, which, altho constant, can be allowed for, especially in determining diastolic pressures. It is well to estimate the probable blood-pres-

sures before using the sphygmomanometer and quite rapidly the *tactus eruditus*, will anticipate the correct reading, the margin of error being within the limits of instrumental error. After many trials and a considerable number of discarded instruments an accurate and reliable instrument of the aneroid type at last has been secured. The first consideration, then, is if the internist is to use an instrument of precision be sure that it is in reality such an instrument and translate tactile sensations into mathematical statements so that complete dependence will not be placed upon the instrument because the finger is capable of furnishing all that the instrument can do and in addition gives information as to the other characteristics of the pulse wave.

Quite simple and apparently exact tables have frequently appeared in the literature, giving the normal blood-pressure at each decade of years of age and even formulas by which the normal systolic blood-pressure could be computed. Experience with more than fourteen hundred men, all of more than sixty-five years of age, demonstrated that scarcely a score presented the supposed normal (for their age) systolic blood-pressure. The majority showed from twenty to thirty millimeters below the assumed normal and a greater departure was by no means infrequent. The second consideration may be stated that while it is true that each individual probably has a systolic and diastolic blood-pressure which is peculiar and normal for him, yet no arbitrary conclusions can be accepted only so far as investigations of large numbers of presumably normal individuals may suggest an average and a probable norm.

As thermometry went thru a period of nearly half a century before the thermometer became an instrument of precision and

correct deductions as to the relative importance of temperatures abnormally high or low became of daily practical use, so sphygmomanometry is going thru the same course. Since high or low temperatures are not clinical entities to be treated as such, nor pegs upon which to hang a prescription, so high or low systolic or diastolic blood-pressures are not *per se* to be the object of therapeutic intervention, for this procedure would only invite disaster quite as surely as "bringing down the fever" acted in the decades that are now past. The third consideration would appear to be, that having established the systolic and diastolic blood-pressure, search must be made for the cause of the presumably abnormal readings of the sphygmomanometer and this will lead to a thoro investigation of every function and organ before the valid cause thereof may be accurately determined, and this cause must be the object of therapeutic intervention.

As for the causes of abnormal blood-pressures after more than thirty years of laboratory investigation and clinical practice, I am by no means certain that a complete catalog of these causes is possible at the present time and I am equally positive that these various causes, in our present state of knowledge, cannot be marshaled in their proper perspective.

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Exophthalmic Goiter.—Exophthalmic goiter is nearly always surgical and the earlier the operation is done the better off is the patient. Some get well without operation, but these are very few. Others make partial recoveries according to the degree of degeneration or secondary complications. If left untreated by surgical means, all the organs in the body suffer to a dangerous degree, particularly the heart, kidneys and liver.—Dr. J. A. Crisler (*Memphis Med. Mo.*).

THE RELATION OF THE ENDO-CRINE ORGANS TO HIGH BLOOD-PRESSURE: A Newer Interpretation.

BY

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As it is generally interpreted today, endocrinology affords no information calculated to elucidate the relation between the endocrine organs and vascular hypertension. To illustrate this fact I will submit what Swale Vincent,¹ Professor of Physiology in the University of London, and probably the best informed, among physiologists on endocrinology as a whole, had to say only last August in a lecture on the present status of this branch of science, limiting myself to those organs which, as will be shown, may influence the blood-pressure.

Beginning with the adrenals, Professor Vincent concludes that "there is little or no evidence that the medulla of the adrenal bodies is of any importance" and that the function of these organs "is probably wrapped up in the activities of the cortex and not essentially connected with formation of adrenin." The thyroid gland, he suggests, was added to the body "to permit in it a greater range of flexibility of energy output." As to the pituitary body, recent investigators indicate the probable need, he holds, of "a reconsideration of our whole attitude," while the evidence that in the gonads the interstitial tissue and in the pancreas the islets of Langerhans provide an internal secretion, is deemed "by no means convincing."

When we realize that this represents the

residue of almost seventy years' labor on endocrinology since its scientific study was inaugurated by Brown-Séquard, such a meager showing—which probably could not be duplicated in any other line of human endeavor as the product of so prolonged a period of work—cannot but suggest that some misinterpretation of this vast asset of knowledge underlies physiologic methods of study. From my viewpoint, it is but the normal outcome of a "scientific discrimination" system in which practically everything is eliminated but the results of experiments in normal animals by a few physiologists. Every other branch of medical science, clinical medicine and its numerous specialties, pathology, surgery, histology, pharmacology, etc., is discarded, along with the physiologic labors of such men as Brown-Séquard, Schiff, Cyon, Langlois, Schäfer and others, the whole galaxy of stars of the last century. If such sacrifices were necessary to insure great constructive results, they would be justified, but, as we have seen, they are purely destructive as regards any functions carried on by these organs.

Conversely, the functions I have attributed to the same organs for many years have stood the test of time because they were based upon an impartial analysis of the work done in all branches of medicine, *including* physiology, and a synthesis of data which harmonized automatically. I will, therefore, base the present article upon my own deductions concerning these functions, a brief summary of which will first be submitted.

The adrenal medulla from my viewpoint fulfills two joint functions which also have been *sub judice* for a century, pulmonary respiration and tissue oxidation. Professor Halliburton² but two years ago wrote that "our knowledge of tissue respiration is so scanty that we can say but little about its

pathologic bearing." Various physiologists had emphasized the need of a secretion to explain the manner in which oxygen was taken up from the air, *i. e.*, pulmonary respiration. In 1903, I found (1) that the required secretion was that of the adrenals, which reached the lungs by way of the heart in the blood of the vena cava; (2) that it took up the oxygen from the air in the alveoli, causing the blood to become arterialized and to form part of the hemoglobin in the red corpuscles; and (3) that it carried on as a catalytic oxidase (adrenoxidase) tissue oxidation. Work done in various branches, internal medicine, surgery, histology, general biology, pathology, biochemistry and physiology (even tho in the case of the latter branch, its data proved useless to the physiologists) has collectively sustained this interpretation by a large aggregate of facts. Adrenin was even found to turn venous blood into arterial blood. Briefly, the medullary secretion carries on, from my viewpoint, both pulmonary respiration and tissue oxidation.

The adrenal cortex which constitutes nine-tenths of each adrenal, also carries on a function of importance, but which had remained unknown. Recently, however, I took up the question on the "all science" plan referred to above, and was led to the tentative conclusion³ that the cortical function was one closely connected in the tissues with that of the adrenal medulla. Briefly, this was that of the two main lipoids the adrenal cortex is known to contain, one, a phosphorized fat, lecithin, cooperated with the medullary secretion, the oxidizing enzyme, in all tissues, for the liberation of the systemic heat energy, the interaction of phosphorus and oxygen, as is well known, developing heat.

The adrenal cortex contains another lipoid, however, cholesterol (cholesterol)

which is a monatomic secondary alcohol, and contains no phosphorus. Cholesterol, from my viewpoint, serves to moderate or inhibit the lability or inflammability of the lecithin phosphorus to the action of oxygen.

The lecithin phosphorus needs to be controlled in two directions, however, to prevent morbid effects. Thus, cholesterol by moderating its lability prevents the familiar tissue necrosis which phosphorus produces. Conversely, when too low, its lability entails a corresponding slowing of the basal metabolic rate. To sustain the latter up to its normal limit, the thyroid supplies its iodine in organic combination. If iodine and phosphorus are placed side by side in a saucer, they will begin to burn in the presence of the air oxygen. The thyroid iodine (thyroiodase, as I termed it fifteen years ago) does the same thing to the lecithin phosphorus: it increases its inflammability. The liberation of heat energy is thus kept in perfect equipoise during health, between the coordinative effects of cholesterol and thyroiodase.

The heat energy thus liberated has itself a function, however, one which brings in the pancreas. While as Mendel⁴ states, digestive enzymes "enter everywhere into the manifold activities of cells in every feature of metabolism," both in plants and animals, the most active proteolytic enzyme is known to be tryptic in nature. Again, as is well known, digestive enzymes are active according to the temperature to which they are subjected, the laboratory maximum of trypsin being about 104° F., and somewhat higher in the living body. The heat energy developed, therefore, serves to sustain the proteolytic action of the digestive enzymes, not only in the alimentary tract, but also in the tissue cells, the foods being thus prepared for assimilation and cellular anabolism. The process persists, however, dur-

ing the latter and continues during the catabolic phase to break down all waste products of metabolism and thus reduces them to end-products which can be eliminated without harm, particularly by the skin and kidneys.

The heat energy liberated has another function of paramount importance: That of protecting the body against toxic wastes, organic poisons, toxins and pathogenic organisms. It does this in the same manner as that described; it raises the catabolic activity of the tissue trypsin including that in the phagocytes and digests these pathogenic substances precisely as it does food in the alimentary tract, only that it carries the digestive process to a finish in order to insure the reduction of all harmful substances, including detritus, to that of harmless eliminable end-products. To do all this, however, a greater development of heat is sometimes necessary; hence the raise of temperature we term *fever*. At times this process becomes too active and the blood-cells are subjected to the digestive process, whereas in the liver the temperature is higher than elsewhere, causing *hemolysis*. Hyperpyrexia may even cause actual tissue digestion as, for instance, of the cardiac valves in malignant endocarditis, *i. e.*, *autolysis*, a process now theoretically attributed to bacteria.

The three organs reviewed constitute, from my viewpoint, the fundamental triad which chemically sustains metabolism and autodifensive activity, *e. g.*, the adrenals, thyroid and pancreas. They are the source, moreover, of the special dynamic energy in organs which are the seat of especially active functions, all particularly rich in lipoids and adrenoxidase (chromaffin substance). The corpus luteum, for instance, is so rich in lipoids that its color, yellow, is similar to that of the adrenal cortex. The

anterior lobe of the pituitary body comes next in this respect, for under osmic acid or other lipoid stains, the fat droplets are so numerous that the section recalls the face of a case of confluent smallpox. That this lobe supplies its mate, the posterior or neural lobe with these lipoids and that the latter is connected by nerve paths with the adrenals, thyroid and kidneys and influences their activity is now beyond question.* This lobe, the brain and entire nervous system are also known to contain in their myelin both lecithin and cholesterol. Many years ago I showed also that adrenoxidase circulated in the axis cylinders, thus furnishing the oxygen factor.

That the blood corpuscles are the intermediaries for lecithin and cholesterol is probable, for these are well known to contain both lipoids along with adrenin and iodine. The thymus also belongs to the phospholipoid series, particularly in the growing child as a focus of special energy for developmental purposes. This applies likewise to the testicular interstitial tissues and the ovaries.

The Endocrine Functions in Vascular Hypertension.

Altho apparently complex, the process summarized above is, on the whole, relatively simple. Briefly, the lecithin phosphorus (adrenal cortex) as source of heat, is held

*This tends to eliminate the secretion theory. We have seen that Swale Vincent recognizes the need of reconsidering the prevailing views concerning the pituitary body. He bases his conclusion on the experiments of Camus and Roussy, which showed that lesions of the base of the brain could produce diabetes insipidus, previously attributed to an "internal secretion." But my opinion of fifteen years' standing that a nerve path exists from the pituitary to the kidneys explained the occurrence of this symptom. Recently in a series of over thirty recorded autopsies in cases of diabetes insipidus I found that all, tho unselected, showed lesions either in the posterior lobe, or along the hypophyseal nerve path, *i. e.*, in the tuber cinereum, the bulb, cord and splanchnic nerve to the kidneys.

in check or moderated by the cholesterol (adrenal cortex) and rendered more inflammable by the iodine (thyroid), the necessary oxygen being supplied by the adrenoxidase (adrenal medulla). The heat energy liberated regulates the proteolytic or digestive activity of the tryptic enzyme (pancreas) in all tissue cells, including the breaking down of tissue wastes until they become eliminable end-products. If toxins, bacterial endotoxins, or other organic poisons capable of evoking such a reaction are present, the heat energy developed is increased (fever) to enhance the digestive power of the tryptic ferment. This process is governed by the posterior pituitary thru the nerve paths it sends to the various organs concerned. Division of this nerve path in the basal tissues prevents fever.*

An important feature of this conception of endocrine function is that it reconciles many opinions which have been held to be antagonistic. It shows, for instance, that the observations of Oliver and Schäfer of 1894, that the adrenal secretion influenced the general blood-pressure by acting directly upon the cardiac musculature and the arteries were sound, the essential point overlooked by their antagonists in this connection being that the experiments of the former had not been performed with adrenalin, which did not exist at the time, but with extracts of the whole gland, both the medulla and cortex. This does not,

however, prevent minute doses of adrenalin (Moore and Purinton, Hoskins and McClure) from producing vasodilation (by causing, from my viewpoint, constriction of the vasa vasorum and ischemia of the vascular muscularis, thus causing relaxation of its fibers) nor from evoking many other effects connected with the respiratory process which I have attributed to it, and which have been confirmed by other observers. Among these may be mentioned augmented intake of oxygen and output of carbon dioxide, increase of tissue oxidation and of the temperature, acceleration of the basal metabolism, conversion of the venous blood into arterial blood, etc.

This relegates, however, the actual blood-pressure raising power to the lecithin of the adrenal cortex which, we have seen, is the excitant lipoid. Pharmacology and clinical experience have long ago verified the fact, first pointed out by Danilewsky, that lecithin was a powerful stimulant of the cardiac systole and of the general vascular tone, as well as an energetic promoter of general nutrition. Comparative biochemistry sustains these observations by showing that Nature provides the adrenal cortex with a relative proportion of lecithin commensurate with the muscular power, including that of the heart and vessels. The influence of lecithin on growth and muscular development is also well known, the "infant Hercules" of shows due to cortical hypernephroma being familiar examples. On the whole, these and many other available data explain the long existent impression that the adrenal cortex influenced the blood-pressure.

Nor does it eliminate the power of adrenin to do so, but in larger relative doses, as long observed by clinicians. It is well known to cause powerful contractions of the arterioles, and thus to increase the periph-

*That section of the basal tissues here prevented fever and the action of antipyretics, was shown many years ago by Sawadowski, while other physiologists, Ott and Scott among them, produced fever by pricking or irritating this area. Concerning the connection of the products mentioned with the immunizing process, it is important to recall that none of those now recognized, bacteriolysins, agglutinins, precipitins, etc., have been isolated and that their existence has even been doubted. On the other hand, my view concerning the identity of the thyroid secretion in the process has been confirmed at the Pasteur Institute of Paris, in Belgium, Italy and elsewhere.

eral resistance, sometimes to a dangerous degree when used in large doses subcutaneously, while producing a marked tho passive vascular tension. Persistent dosage with adrenin may also cause a marked tho gradual rise of pressure, due probably, however, to increased general oxidation, judging from the general concomitant improvement in cases of hypoadrenia and the rise in basal metabolism.

Analysis of the influence of the various endocrinopathies upon the blood-pressure tends to throw some light upon its variations under other conditions. Engelbach⁵ in a series of 500 cases of endocrine disorder found 46 which had a blood-pressure above 160 and in which none of the usual causes of this condition, renal disease, arteriosclerosis, etc., existed as far as careful examination, including the usual tests, of each case, could indicate. A noticeable fact in these 46 cases is that, while the pituitary, thyroid, ovaries and testicles are represented in the series, both deficient and excessive activity of these organs occur as causes of arterial hypertension. Yet of these, 37 are of the hypo- or insufficiency type. The general indications for treatment suggested by Engelbach are "merely those of correcting, if possible, the disturbed internal secretory balance." We have seen, however, what little light is available on this phase of endocrinology, which primarily requires a knowledge of the functions of the various organs interested. The bio-chemical factors I have submitted, however, enable us to carry out the treatment on rational lines and, as observed in practice, with good results.

As a rule, the cause of arterial hypertension in endocrine cases is to be found in toxic waste products due to inadequate catabolism of both tissue and food wastes. To show this, however, it is necessary to re-

view briefly the rôle of each organ involved, and thus account for the line of treatment advocated.

Hypopituitarism means, from my viewpoint, inadequate nerve impulse to the thyroid, adrenals, pancreas *and kidneys*.^{*} We may not obtain evidence of renal lesions but of low basal metabolism. Obesity may be present and the "deficiency of anterior lobe secretion" idea prevailing, anterior pituitary is administered. In a personal test case the result was marked increase in weight and no reduction of blood-pressure. Why? Simply because the extract administered contained mainly cholesterol which inhibited the activity of the lecithin phosphorus. The administration of lecithin in full doses to cause excitation of the neural lobe, with thyroid suprarenal and trypsin to replace the inadequately secreted hormones, soon turned the tide. From experience in cases of ordinary obesity it would seem as if the pituitary body thus interpreted were more frequently involved than is generally believed.

Hypothyroidism, as I have interpreted it, means deficient sensitization of lecithin phosphorus thru deficiency of organic iodine. The resulting phenomena are well pictured in myxedema and cretinism. The tissue phosphorus is, so to say, banked and the vitality at a very low ebb. This includes, we have seen, deficient catabolism of wastes when the equipoise between it and anabolism is not perfect (for the whole process of metabolism is slowed) as is the case particularly in larval hypothyroidism; a moderate rise of blood-pressure results due to the autotoxemia and accompanied in some cases by pain in the upper dorsal region, particularly before rising. In all such, desiccated thyroid restores the equilibrium as shown long ago by Hertoghe.

*See preceding footnote on page 396.

In ovarian disorders incident upon menopause, during which a rise of blood-pressure may be observed, the predominant factors are similar to those in the adrenal cortex and the anterior lobe of the pituitary, *i. e.*, lecithin, cholesterol and adrenoxidase. When, as observed in personal cases, lecithin is administered in retarded puberty, the ovaries are at times rendered hypersensitive and the onset of the catamenial flow is aided. During menopause the production of both lipoids is reduced owing to decreased need for them and for a time the general metabolism of the body at large is disturbed, owing to the accumulation of imperfectly broken-down waste products. Tides of excessive catabolic activity occur in practically all cases, as shown by "heat spells" of "flushes" as patients call them. Here, ovarian gland, corpus luteum and thyroid are very effective because they restore the normal equilibrium. The toxic wastes being more efficiently hydrolyzed, the blood-pressure recedes.

When a rise of blood-pressure coincides with increased functional activity of the thyroid as observed in about 60 per cent. of hyperthyroidism, particularly in those seen early in the course of the disease, the cause of the disorder *per se* and, therefore, of the arterial hypertension is usually a focal infection, cecal tonsillar, dental, etc. When this is removed the blood-pressure recedes and there is a general improvement. In such cases, especially those giving a *plus* basal metabolism, organotherapy is contraindicated, and vasoconstrictors such as as the salicylates, ergotin and quinine hydrobromide, to reduce the hyperemia of the thyroid and inhibit its functional erethism and absolute rest, give the best results. I have never lost a case of this type, and have never sent one to a surgeon, tho' very few

internists in the United States see more of such cases than I do.

On the whole, autotoxemias are predominating factors in the hypertension observed in the majority of endocrinologic cases, the exceptions being those in which pure hyperadrenia, due to adrenal tumors, or hyperpituitarism as in the erethic stage of acromegaly or pregnancy, prevail.

In hypertensions other than those due to mechanical factors, such as nephritis, cardiac hypertrophy, etc., toxemias are likewise the underlying cause, as shown by the more or less marked vascular tensions in asthma, some forms of epilepsy, gout, plumbism and others. As is well known, even in these, organotherapy is sometimes very effective, adrenin in asthma, the iodides in plumbism, etc.

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The Treatment of Hypertension.—The best treatment of arterial hypertension, says Cumston (*New York Med. Jour.*, May 2, 1923), is that which deals with the etiologic factor. One of the most frequent causes is arterial atheroma and as we now know that arteriosclerosis and atheroma are unquestionably the result of cholesterol deposits in the blood-vessels, it follows that the only way to deal with this condition is to dissolve these deposits. This can be done with the alkaline phosphates, or, better still, with organic phosphatides, which dissolve the cholesterol. Their exhibition during two or three months generally lowers the blood-pressure, and when this is once obtained the result is permanent, a result unattainable with the other hypotensive drugs, their action in this respect being only ephemeral.

BLOOD-PRESSURE IN PREGNANCY.

BY

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No intelligent medical man assumes that blood-pressure is anything but a symptom. But with the laity it is a catchy phrase which we constantly hear, and to which the aforesaid laity attach a varied significance. They have neither the ability nor inclination to analyze its cause, or define what may be the pathologic cause back of it. That it is not uncommon in the pregnant woman, and is of sufficient importance to require careful supervision and treatment no one will deny. Why should this condition exist when a purely physiologic process is developing? Not always is there an attendant albuminuria, and yet it is a menace to the life of both the mother and child. It is, therefore, of utmost importance that if possible we should rightly appreciate its pathology as well as its etiology if we can, as the true basis for such rational treatment as will safeguard the life of both mother and child.

In blood-pressure, as we see it under ordinary circumstances, there are various causes developing this symptom, yet we must recognize the fact that conditions in a large measure are different in the pregnant woman. There is the condition of increased plasticity in the blood, the question of diet, a modification of nutritive conditions from some upset in the internal secretions, thyroid, ovary, hypophysis, adrenals, liver, and last, but by no means least, the placenta. An alteration takes place in the ovarian function during the pregnant stage. We also know that it is true that various nervous reflexes assert

themselves. The pregnant woman is a different person from the non-pregnant woman. I want to emphasize that in arteriosclerosis high blood-pressure being the prominent symptom, that the beginning of the trouble is in the nutritive changes. Toxic conditions in the blood being the predisposing cause at least to the pathologic change in the intima of the arterial system, destroying more or less of the elasticity of the blood-vessels, impairing their power to recoil on the circulating fluid, thus necessitating increased vigor in the action of the heart. Furthermore, clinical observation has convinced the writer that high blood-pressure, as to its evil effects is relative, and such cases treated with the sole idea of depressing the tension, may interfere with physiologic compensation and bring on general depression of the organism, which impresses the subject with the fear of impending hazard to life. Yet we may have a reverse condition in which the low pressure is sufficient to be pathologic. A recent case of low pressure with attendant symptoms has been the suggestion for this paper. The advances in pathology have rendered the analysis of symptoms and their causation more subtle and difficult than ever before, and we often in treatment meet with vicious circles. The danger of convulsions when the blood-pressure is high keeps us ever uneasy, until full term arrives and delivery is accomplished, the pressure being lowered then by the bleeding which usually occurs at the conclusion of labor, during its third stage and the expulsion of the placenta. When we find high blood-pressure our attention immediately reverts to the kidney, yet on analysis, albumin may be absent and secretion normal. I recall the case of a man with high blood-pressure who had four violent attacks of

convulsions, yet in the earlier attacks no pathologic evidence of lesion in the kidney, and in the latter attacks only a trace of albumin, which soon disappeared. This case illustrated the profoundly toxic effect of eating meat, an article of diet which should be prohibited in the high blood-pressure of pregnancy, in fact, there is no more important element of treatment than the intelligent control of the nitrogenous elements of diet. We know the habits of society, and the kind of eating that is done at social functions. Errors in diet bring markedly to the fore the impaired emunctory function of the liver. It should receive as careful supervision in the case of the pregnant woman as do the kidneys, and she is always safeguarded by an occasional dose of calomel. Administration of the usual remedies, nitrites and iodides so commonly used, and with benefit in most cases of blood-pressure, should be carefully considered in treating the blood-pressure of the pregnant woman—the age of the subject is different, she is younger than the average cases of blood-pressure that we see. The effect of medication on the fetus must be considered; it is, too, more difficult to remove the cause, and in a certain proportion of cases, especially where secondary albuminuria sets in, our only recourse is in early delivery either by the natural route or Cæsarian section that the life of both mother and child may be safeguarded. There is a special objection to iodide of potassium, I believe the most valuable remedy that we have, given in increasing doses and pushed for some time, because often it is so hard on the stomach.

When we have urgent symptoms, impaired vision, ringing in the ears, vertigo and headache, if not promptly relieved by

the administration of bromides, our best resource, I believe, is free venesection and complete rest and rigid diet. I have had no experience in that direction, but we know that lead poisoning is a common cause of arteriosclerosis, and I only throw out the suggestion, may not the paint and powder on the faces of the young women of the present day exert a toxic influence, showing up when pregnancy lights the torch, could not this come about, as the sequence of a vasomotor paresis in the blood-vessels? But, per contra, in an experience of many years, it has been my fortune to see for the first time a case of low blood-pressure in the pregnant woman. Note the following case:

Case 1.—Mrs. E. B., age 27, in third pregnancy, a woman of good physique, leads an active life, had the usual diseases of childhood. When menstruation was established at the usual age, she had an occasional fainting attack, has borne two children, had mild fainting attacks in each pregnancy, with uneventful labor and puerperium. No evidence of any cardiac lesions. Repeated examination of urine negative. After the fourth month she had repeated fainting spells, sometimes two in a day, coming on suddenly, with complete unconsciousness; never had headache, dizziness or ringing in the ears. Face pale and lips colorless. Appetite good and every evidence of being well nourished. My attention was first called to her attacks of fainting November 14, 1921. Pulse thready and absolutely lacking in force, blood tension so feeble that it would not record, labor was due January 16, 1922. Baby, a boy, unusually plump and well nourished, weighed eight pounds. The day after confinement record was S. 110, D. 90, pulse normal. Convalescence uneventful, 17th day S. 130, D. 100.

I do not pretend to explain the causes acting in this case. Perhaps it was the effect upon the heart of some upset in balance or perversion in the internal secre-

tions. The case is reported as a suggestion for thought and further observation in this direction, as opposed to the high blood-pressure so commonly seen.

1103 West Franklin St.

BLOOD-PRESSURE, THE X-RAY AND THE ELECTROCARDIOGRAM.

BY

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In the support of the contention that the examination of the heart and the study of the electrocardiogram constitutes an important if not an indispensable part of the appraisal of cardiovascular disease, there is nothing more striking than the very large image of the heart and the very wide excursions of the string of the electrocardiograph in certain instances of high blood-pressure.

The accompanying orthodiagrams and their corresponding electrocardiograms were selected at random for about 300 cases of this type, representing about 10 per cent. of the people sick enough to seek advice in the office of a heart specialist.

In my book, "A Key to the Electrocardiogram," which has just been published by William Wood & Co., I emphasize the point that the electrocardiogram is a picture and is much more valuable when looked at than when described. These illustrations surely convey a mental impression corresponding with the conditions themselves. There were people with very high blood-pressure, well over 220 and running up as high as 290 with very large hearts and all

the earmarks of long-standing cardiovascular disease of a fulminant type.

Laboratory workers sometimes contend that the width of the excursions of the string is no measure of the work of the heart, but it seems to me that the constant recurrence of this type of electrocardiogram in these individuals is a strong argument to the contrary. I would once more urge the importance of the study of many electrocardiograms by physicians so that a meaning of each may finally be drawn from inspection of the electrocardiogram itself, to be confirmed later, by careful measurements and classifications of abnormal waves.

In the treatment of these extreme conditions I have had the greatest satisfaction in urging the importance of diet, exercise, out-of-doors, and rather simple medication. One thing that the person carrying a chronic hypertension cannot afford is muscular deterioration such as comes from prolonged rest in bed. Another is the deterioration of the blood by the abuse of saline purgatives or unwise reduction cures. Castor oil is a most beneficent remedy and I usually prescribe it in a formula given me once by my friend, Dr. Gordon K. Dickinson of New Jersey:

Tr. iodine	ʒ I
Menthol	gr. XII
OI ricini	ʒ VI

Sig.: Two tablespoonfuls at bed time on the 1st, 3rd, 5th, 12th and 26th of the month in beginning treatment, then on the 18th of each month following.

The diet that works out best is the "few protein" diet which restricts the number of protein foods but does not limit quantity of those allowed.

The psychologic management of these people is of great importance and a man who has successfully handled hypertension

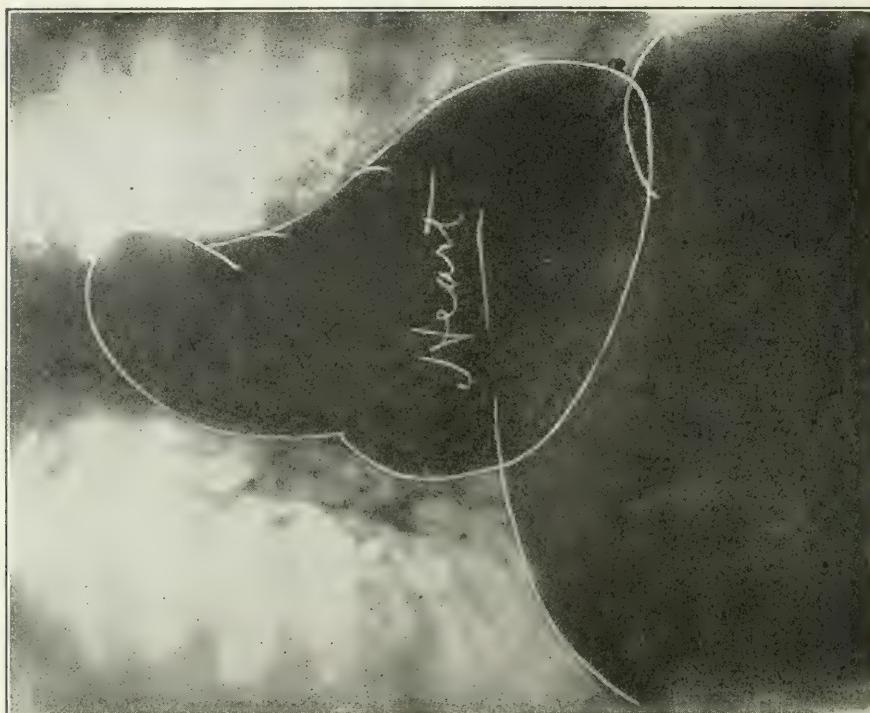


FIG. 1. See cardiogram (Fig. 2) on opposite page.

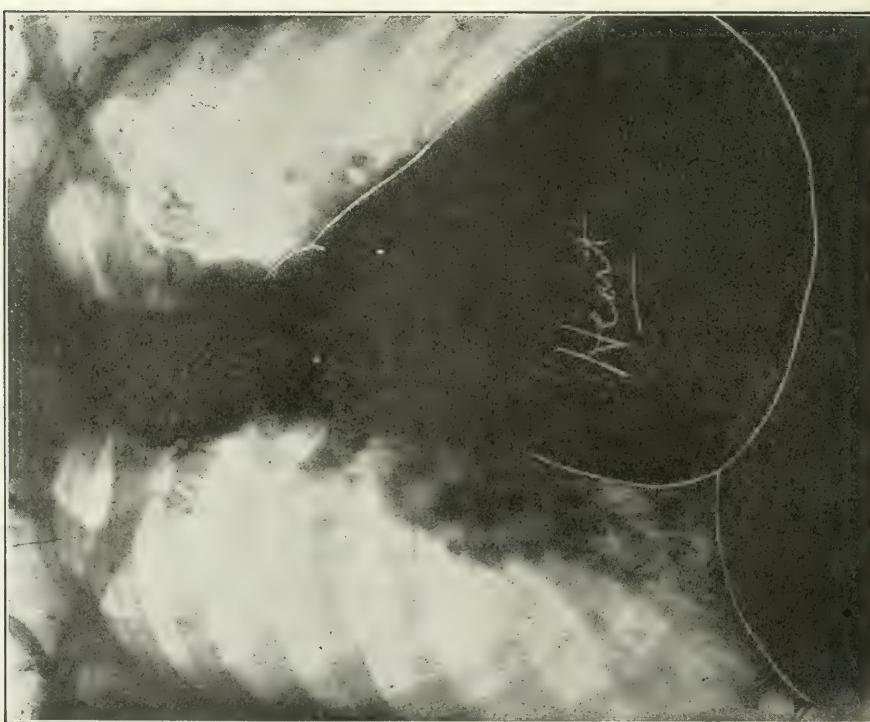


FIG. 3. See cardiogram (Fig. 4) on opposite page.

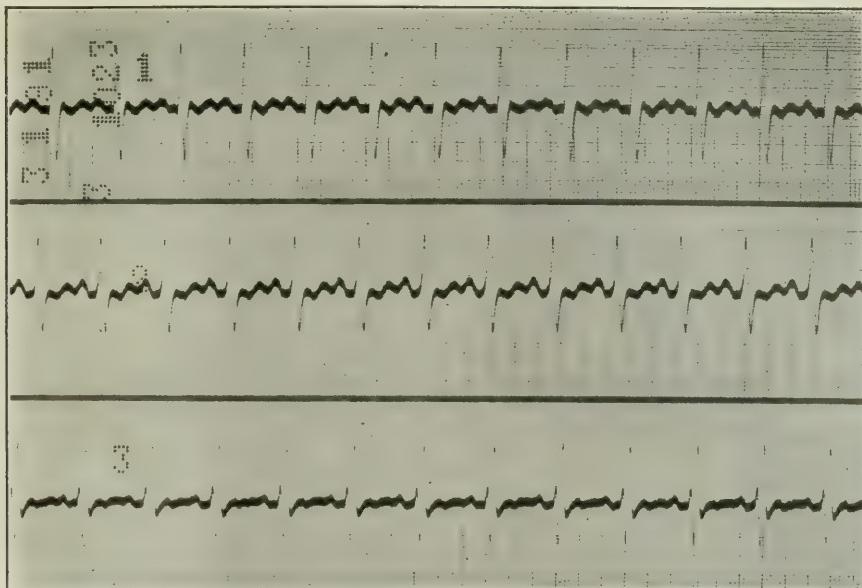


FIG. 2. Mrs. BLML came under observation February 24, 1923, with a blood-pressure of 150 diastolic and 230 systolic. She has done pretty well under a suitable regimen. Her blood-pressure has remained fairly constant. (See X-ray [Fig. 1] on opposite page.)

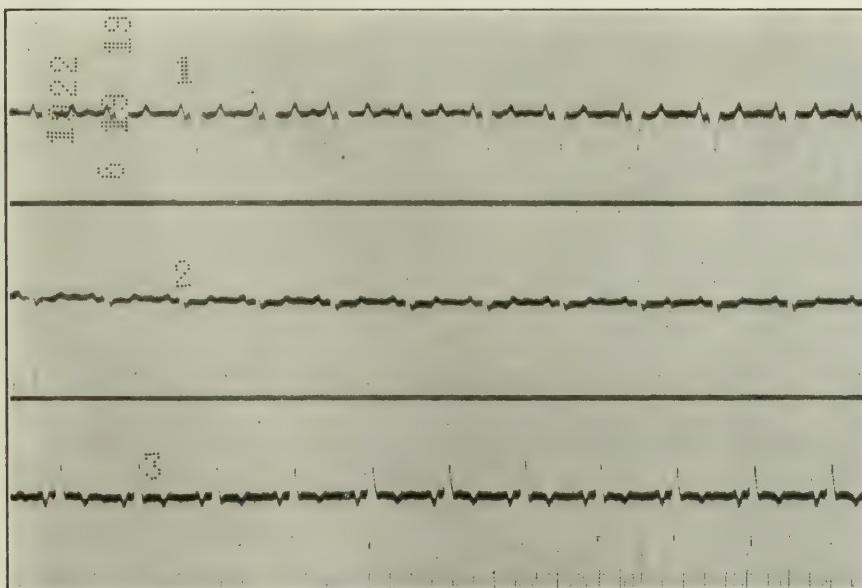


FIG. 4. Mrs. LMFF came under observation June 19, 1919, referred to me by her employer. Her blood-pressure was 120-200. Her general condition has remained fair, but her blood-pressure has averaged higher as time has gone along on account of the progress of a severe kidney lesion. At the present time it averages 120-200 with records as high as 130-240. However, she has continued at her work as office manager. (See X-ray [Fig. 3] on opposite page.)

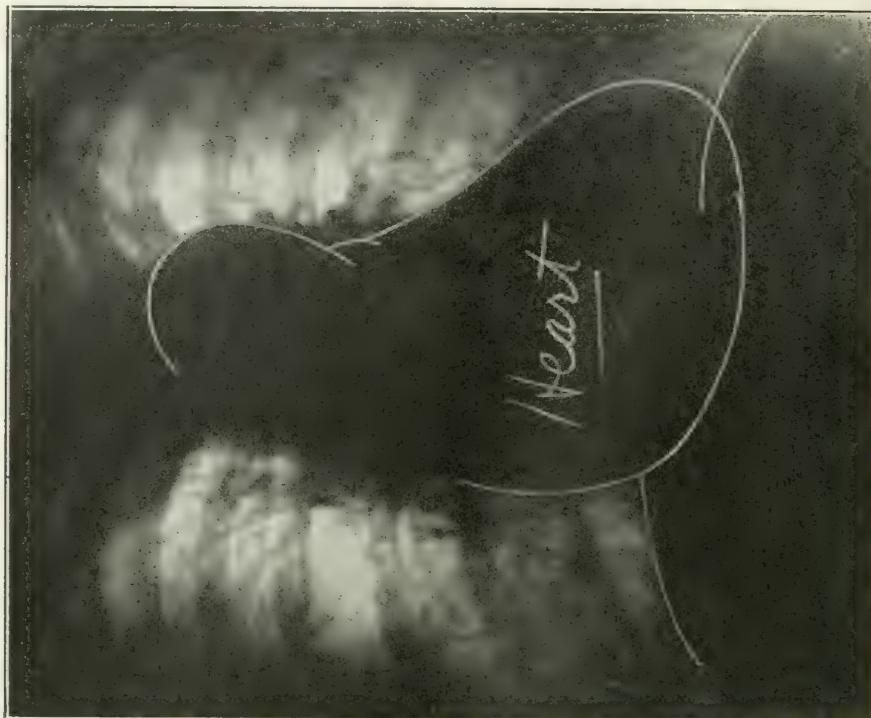


FIG. 5. See cardiogram (Fig. 6) on opposite page.



FIG. 7. See cardiogram (Fig. 8) on opposite page.

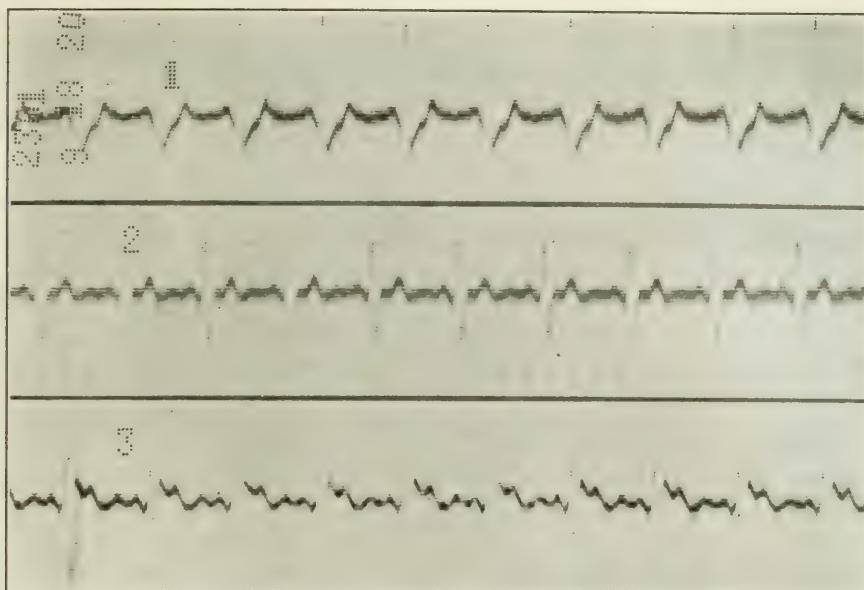


FIG. 6. Miss FBHL came under observation September 18, 1920, with a blood-pressure of 120-240. She had previously been on a strict diet for five years. Her blood-pressure remained fairly fixed and she passed from our observation after three or four months. (See X-ray [Fig. 5] on opposite page.)

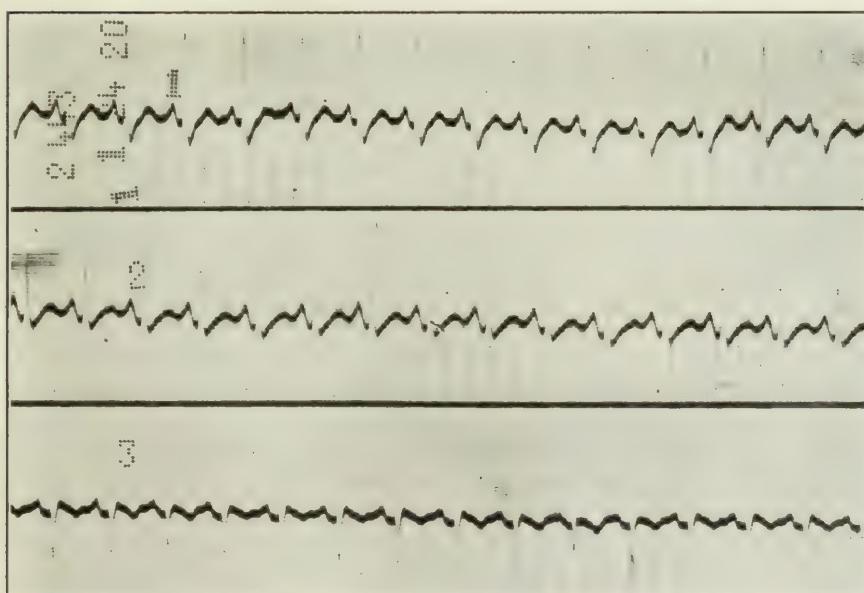


FIG. 8. Mrs. FIIB, a woman of 56, referred to me by Dr. J. D. Nisbit of New York City, showed on November 24, 1920, a systolic pressure of 240 and diastolic 140. On a suitable regimen she has done very well. Her average pressure has remained about 120-200 and she is still under observation. (See X-ray [Fig. 7] on opposite page.)

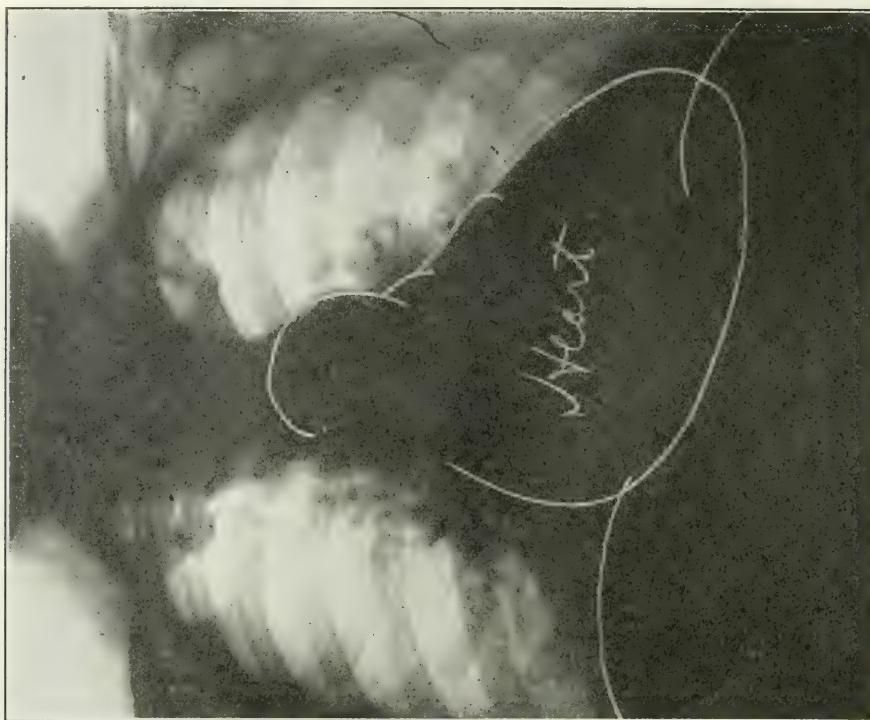


FIG. 9. See cardiogram (Fig. 10) on opposite page.

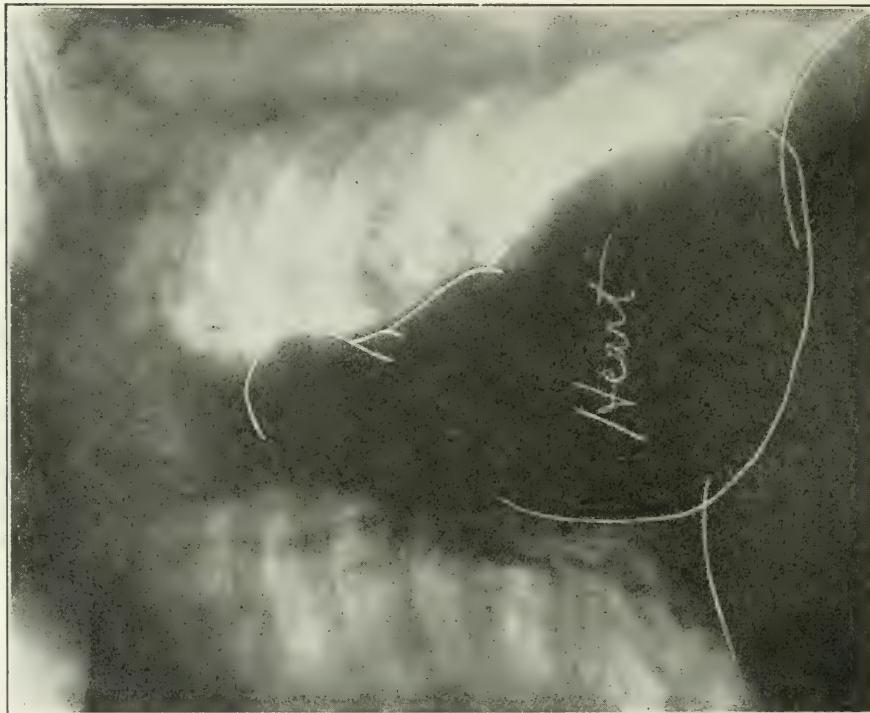


FIG. 11. See cardiogram (Fig. 12) on opposite page.

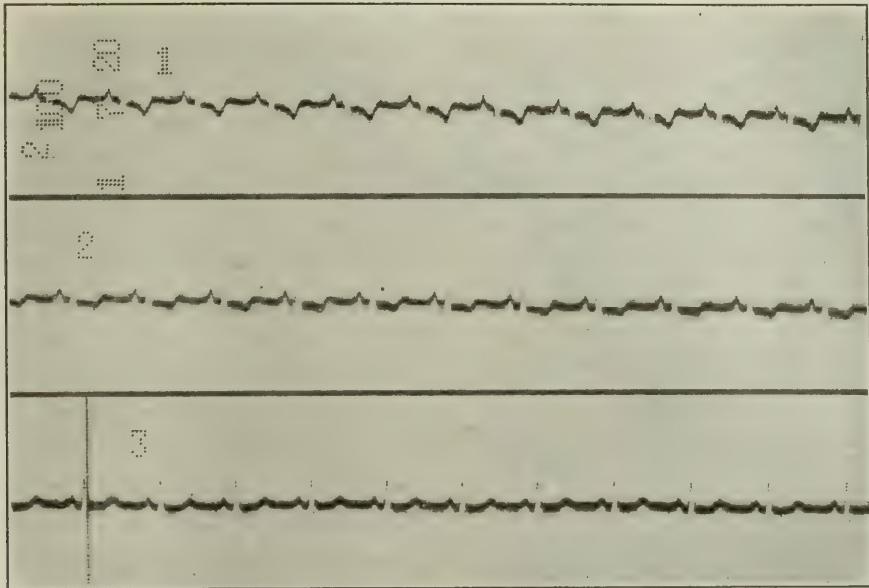


FIG. 10. Mr. FLDD, 45 years of age, came under observation on January 7, 1920, with a blood-pressure of 130-230. The diastolic pressure remained practically fixed. The systolic pressure averaged 210. On a suitable regimen involving the use of castor oil every three weeks, diet and out-of-door exercise, he has been practically well since. The only point in his history indicating the cause of the trouble was a possible injury to the kidneys caused by scarlet fever. (See X-ray [Fig. 9] on opposite page.)

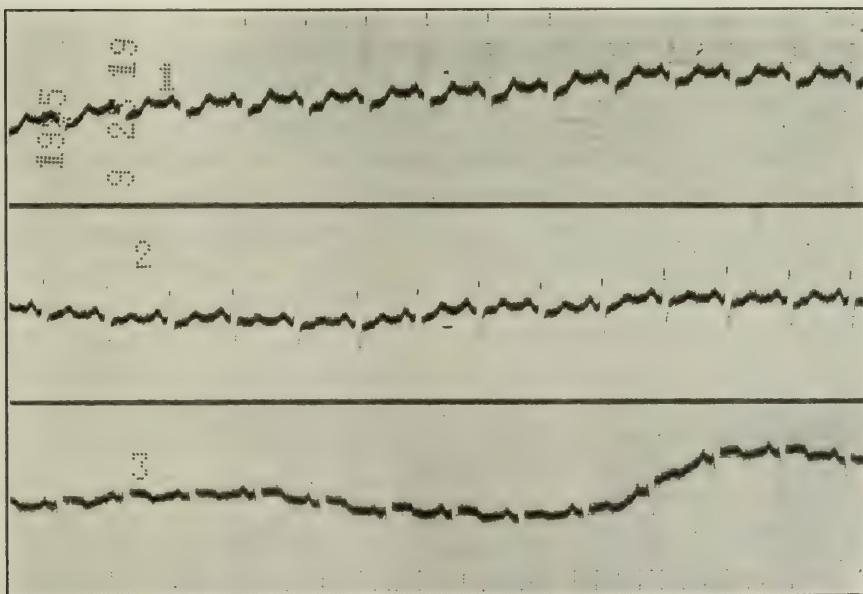


FIG. 12. Mrs. LMMS came under observation September 23, 1919, with a blood-pressure of 140-240. She was under observation until December, 1922, and her blood-pressure remained fairly fixed at about 120-220. (See X-ray [Fig. 11] on opposite page.)

following the menopause in women during his professional career is certainly entitled to a great reward in the hereafter. The treatment of the blood-pressure itself, without regard to the need for it, has always, in the end, led to disaster, confirming what I have taught for many years—that blood-pressure is a compensatory phenomenon.

109 East 61st St.

BLOOD-PRESSURE IN HEALTH.

BY

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It has been established that the blood-pressure increases with weight as well as with age. By this is meant that of two men, age 30 and 5 feet 7 inches tall, one who weighs 140 pounds usually has a lower blood-pressure than one who weighs 180 pounds. Also if the weights and heights are identical, the man of 30 has a lower pressure than the man of 50. Evidently, then, we can no longer say offhand that a man of 30 should have an average systolic pressure of 124 mm., for his weight in proportion to his height, *i. e.*, his build, must be given also. Until this is known, his average systolic pressure may be anywhere

from 118 mm. to 132 mm.

The introduction of this factor of build, which is the relation of height and weight irrespective of age necessitates a more elaborate table to set forth the average blood-pressure. The simplest classification of height and weight together is found in the Build-groups of the Medico-Actuarial Mortality Investigation.¹ These are based upon the average weight for each inch of height at age 37. Build-group 0 comprises those within 5 per cent. above and below the average. Build-group 1 comprises those between 5 per cent. and 15 per cent. above the average. Build-group 2 comprises those who are 15 per cent. to 25 per cent. above; Build-group 3, those who are 25 per cent. to 35 per cent. above; Build-group 4, those who are 35 per cent. to 50 per cent. above; Build-group 5, those who are more than 50 per cent. above the average. Among the lighter weights, Build-group 6 comprises those who are 5 per cent. to 15 per cent. below the average; Build-group 7, those who are 15 per cent. to 25 per cent. below; Build-group 8, those who are 25 per cent. to 35 per cent. below; and Build-group 9, those who are more than 35 per cent. below the average. The following Table 1 shows the weights of these Build-groups for the five heights, 5 feet 4 inches, 5 feet 6 inches, 5 feet 8 inches, 5 feet 10 inches and 6 feet. From these it is easy to calculate the weight for other heights.

TABLE 1.
Build-groups.

Height	(9)	(8)	(7)	(6)	(0)	(1)	(2)	(3)	(4)	(5)
5 ft. 4 in.	90*	91-104	105-118	119-132	133-147	148-161	162-175	176-189	190-210	211†
5 ft. 6 in.	95*	96-109	110-124	125-139	140-155	156-169	170-184	185-199	200-221	222†
5 ft. 8 in.	101*	102-116	117-132	133-148	149-164	165-180	181-196	197-211	212-235	236†
5 ft. 10 in.	107*	108-124	125-141	142-158	159-175	176-192	193-209	210-225	226-250	251†
6 ft. 0 in.	115*	116-133	134-151	152-169	170-188	189-206	207-224	225-242	243-268	269†

*and under; †and over.

Systolic Pressure.

By means of these Build-groups we can now construct tables of blood-pressure which show the relations of age, pressure and build, and the following Table 2 shows this for the average systolic pressure of healthy men:

TABLE 2.
Average Systolic Pressure—Healthy Men.

Build-groups.

Ages	(9)	(8)	(7)	(6)	(0)	(1)	(2)	(3)	(4)	(5)	All blds.
15-19	114	116	120	122	123	125	126	128	130	131	123.5
20-24	117	119	121	123	123	125	126	128	130	131	124.3
25-29	117	120	121	123	124	125	126	128	130	131	124.5
30-34	118	120	121	123	124	126	127	129	131	132	125.1
35-39	118	121	122	123	124	126	127	129	131	132	125.3
40-44	119	121	123	124	126	127	129	130	132	133	126.4
45-49	121	122	125	126	127	129	131	132	134	135	128.2
50-54	123	124	126	128	130	131	133	134	136	137	130.2
55-59	126	128	129	131	133	134	137	138	139	140	133.5
60 and over	128	129	133	133	135	136	138	139	140	142	135.3

This table is based upon the examinations of 150,419 risks who were accepted at standard rates during the years 1907 to 1919, both inclusive, by the Mutual Life Insurance Company of New York. In three-quarters of them the auscultatory method was used, and more than 95 per cent. were made by our examiners in New York City or by our medical referees and their immediate assistants. These examiners have all been selected for their medical skill and ability in physical diagnosis. All of the medical referees and many of their assistants have been trained at our Home Office. Less than 5 per cent. of these reports on blood-pressure were furnished by other medical examiners, mostly in cities. That these reports have been extremely accurate is shown by the fact that the actual mortality was only 79 per cent. of the expected, and this included the numerous deaths from the influenza epidemic and the war. This means that there were 2,906 actual deaths while we expected 3,691. If the 596 deaths due to epidemic influenza and the war are excluded, the

mortality drops to 63 per cent. The low mortality shows without question that these examinations were well made and that the selection was good. The mortality is about 10 per cent. lower than that of the entire business of the Mutual Life covering the same period.

A study of this table shows that the systolic pressure in any age period increases about 14 mm. from the lightest Build-group to the heaviest. It also increases about 11 or 12 mm. in any Build-group from the youngest age period to the oldest and this increase is more rapid after age 40. Undoubtedly the pressures in the older age periods will seem very low to many clinicians. An eminent heart specialist remarked to me one day that he preferred to see a pressure of 150 mm. in a man of 60 rather than a lower pressure. As he was talking about cases of valvular heart disease, the statement may have been right in regard to these, for such a pressure would indicate that the heart muscle was sound and vigorous. But healthy people should not exceed 140 mm. at any age if they wish to live the longest possible. At least a suspicion of this seems to be indicated by the fact that if those risks in Table 2, whose pressure is above 140 mm., are eliminated, the groups mainly affected are among the heavier weights and the older age periods. Only 8,579 entrants (5.7 per

cent.) are eliminated and 141,840 are still left. The general average for all ages and builds is lowered only 1.3 mm. But the average for the age period 60 and over is only 130 mm. instead of 135 mm. and for 50-54 it is a little less than 128 mm. instead of 130 mm. The marked increase at age 40 largely disappears. The averages for the heavier Build-groups are reduced 2 or 3 mm., but for the lighter Build-groups less than 1 mm. Evidently much of the differences in Table 2 between the top and bottom row and between Build-groups 9 and 5 are due to the blood-pressure above 140 mm. But there are only 704 entrants whose pressure is above 150 mm. and only 372 of these whose pressure is above 155 mm. The higher averages, therefore, in the older age periods and in the heavier Build-groups are due to the inclusion of an increasingly large number of risks whose pressures lie between 141 mm. and 150 mm. Rogers and Hunter² also make a charge for a systolic pressure of 140 mm. up to age 35 according to the system of numerical rating used by the New York Life Insurance Company. Altogether systolic pressures above 140 mm. are suspected of possible mischief in life insurance circles.

The estimation of mortality for different blood-pressures is still difficult owing to the fact that the cases whose pressure is distant from the average are few. Owing to

this and to the short time that the cases have been under observation, the number of deaths is too small to determine the exact amount of the hazard in the classes of high and low pressure. Furthermore, as the actual deaths among all the cases who gave a record of the blood-pressure are only 79 per cent. of the expected deaths, a mortality of 95 per cent. in any class indicates an increased hazard. Yet it seems ridiculous to say so since the percentage is lower than 100. With these explanations Table 3 is submitted. In order to get a more correct idea of the significance of these mortality ratios they have been regraded on the basis of a par of 100 per cent. for the total of each age group. For example, the actual ratio of the entire age period 15-29 is 96 per cent. This is called 100 and all the ratios for the different classes of pressure in that age period are increased or decreased proportionately. By this means the comparative relation of the mortality ratios to each other is correctly set forth and it is much easier to distinguish the pressures which show unusually high or low mortalities. Those classes which contained less than 10 deaths have been cut out. Two sets of ratios are given. The first column includes the deaths from influenza and the war, and the second column excludes these. The expected deaths were calculated by the Medico-Actuarial Mortality Table.

TABLE 3.
Assumed Mortality Ratios.

Systolic pressure	15-29		30-44		45 and over	
	Incl. influ. and war d.	Excl. influ. and war d.	Incl. influ. and war d.	Excl. influ. and war d.	Incl. influ. and war d.	Excl. influ. and war d.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
101-110	107.9	104.0	110.3	113.0	84.7	83.2
111-135	97.2	98.8	96.5	93.7	92.9	92.2
136-140	107.1	99.2	107.8	114.5	107.9	110.9
141-145	109.3	91.9	113.6	126.0	100.0	98.9
146-150	....	....	120.4	147.3	137.0	137.0
151-155	....	....	....	....	100.1	105.1
Over 160	....	....	....	....	167.6	175.9

There are some irregularities owing to paucity of data, and the ratios should be construed as indicating trends rather than complete expectations. The class of 111-135 mm. shows good results thruout. The low pressure class of 101-110 mm. shows poor results before 45 but after that it shows excellent results. It behaves in this respect somewhat like the light-weights who show bad mortalities in the younger ages, but very excellent ones above 50.

The class of 136-140 mm. shows ratios a little worse than the average thruout. The class of 141-145 mm. is decidedly worse than the average in the age periods below 45, but it is about par after that age. Among these higher pressures many of the deaths

class of 156-160 mm. was too small to make a record.

The class of those with a pressure over 160 mm. contains two sets of entrants. A few showed a pressure slightly above 160 mm., but were very good otherwise. Most of them, however, showed a pressure above 160 mm. at the first examination, but this came down at subsequent readings below 160 mm. There were only 288 entrants in the entire class, of whom 185 were at least 60 years old, and 172 were in the heavier weight groups. Certainly the combination of high blood-pressure and overweight makes for a very high mortality.

Dr. John W. Fisher, Medical Director of the Northwestern Mutual Life Insurance

TABLE 4.
Dr. Fisher's Results.

Mm. over average blood-pressure for each age period	Limits of the group for youngest and oldest age period	Actual deaths	Expected deaths	Ratio per cent.
+10 to +14	130-134 mm.	146-150 mm.	26	19.1
+15 to +24	135-144 mm.	151-160 mm.	125	68.0
+25 to +34	145-154 mm.	161-170 mm.	111	54.3
+35 to +49	155-169 mm.	171-185 mm.	121	48.7
+50 and upwards	170 and upwards	186 and upwards	124	248.5
				414.7

are due to the so-called degenerative diseases of the cardiac, vascular and renal systems. By rejecting risks which show the existence of such diseases the influence of reliable medical examiners is conspicuous for the first five years of insurance and probably has a demonstrable effect even up to the tenth policy year.⁸ If the first five policy years are eliminated in this class of 141-145 mm., the ratios are high for all the age periods. For those of 45 years and upwards, it is 123 per cent. adjusted. The same comment applies to the class of 146-150 mm., in which the policy years 6 and over show a ratio of 161 per cent. adjusted for age 45 and over. The class of 151-155 mm., on the other hand, shows average results, but the deaths are few and the selection was undoubtedly more careful. The

Company, has published some mortalities among cases of high blood-pressure that are extremely interesting.⁴ All the cases were risks who were rejected by his company on account of high blood-pressure only. The high pressure was permanent so far as known, for if any case showed a lower blood-pressure later on and was accepted, it was removed from his list. By an ingenious follow-up system he obtained quite definite records of 4,165 cases examined during the years 1907 to 1920, which furnished 507 actual deaths and 220 expected deaths, as calculated by the American Men Mortality Table.

His published records are divided into classes according to the number of millimeters above his table of average systolic pressures, and all ages are assembled in

each class. His average pressures do not take account of build, but are grouped according to age only in five-year periods and range from 120 mm. for age period 15-19; up to 136 mm. for age period 65 and upwards. The above Table 4 is abridged from his, but is elaborated by the insertion of the second column which sets forth the limits of each class for the youngest and oldest age periods. The other age periods will fall in between these two.

It is not possible to compare these figures directly with those in Table 3. In that table the data are obtained from healthy accepted risks while in this they are furnished by unhealthy rejected applicants. It is evident, however, that the two tables support one another in the seriousness with which we should regard systolic pressures which remain persistently above the average, even tho not very far.

A quotation from a paper read last October before the Association of Life Insurance Medical Directors seems appropriate here.

"Probably life insurance and general medicine will never regard blood-pressure in the same light. Life insurance sees only people who are healthy or at least think they are. Even the highest pressure of fat elderly people is below 140 mm. on the average, if they are acceptable for life insurance. This also means that practically as many are below 140 mm. as above and we have seen that of those above 140 mm. nearly all of them are below 150 mm. General medicine, on the other hand, see those who feel that they are sick. If their illness is due to blood-pressure, it is usually high, frequently as high as 200 mm. or more. General medicine knows that these high pressures will come down to 170 mm. or 180 mm. by appropriate treatment and many of them live for years. There are

examples among our own associates. But general medicine does not realize that a small increase in the number of deaths per year means a great difference to life insurance. At age 50 we only expect 14 to die in the following year out of 1,000 living and we call that 100 per cent. mortality. If 28 die our mortality jumps up to 200 per cent. At age 60, if the number of deaths among 1,000 living increases from 26.69 to 40.04 the mortality increases to 150 per cent. If a practitioner should see 1,000 patients with high blood-pressure at age 60 and bet with himself that 974 would survive the year and only 960 did survive he would not feel downcast. In fact, he would probably point to the record with pride and boast of his ability in prognosis. But life insurance would have to tell him that his mortality was 150 per cent. in that group and a medical director who never made a better guess of insurability than that would not keep his position for long. General medicine would look complacently at the living, but life insurance would ruefully regard the dead, for forty claims would have to be paid instead of the twenty-six expected."

Woman's systolic pressure is influenced by age and build in a manner similar to that of man's. An analysis of the reports on 11,937 healthy women, accepted in the years 1907-1919, both inclusive, shows averages quite similar to Table 2. Women below 40 weigh less than men, but even when allowance is made for this, their systolic pressure is 1 or 2 mm. lower than that of men below 40. After 40 woman's systolic pressure is quite equal to man's and may even average 1 or 2 mm. higher. If the women whose pressure is 140 mm. or more (in number only 422) are eliminated as in the case of men, the older age periods and the heavier Build-groups show marked

reductions of 2 mm. to 5 mm. These changes are due to risks whose pressure is between 141 and 150 mm., for there are only 38 whose pressure is over 150 mm. and only 22 of these show a pressure above 155 mm. As in the case of men these changes depend upon the increasing proportion of risks with a pressure of 141 to 150 mm. in the older age periods and the heavier Build-groups and not upon the inclusion therein of risks with an unusually high pressure.

A study of the mortalities of these women yielded results of no consequence, except that the general selection was good and the risks were healthy when examined.

Diastolic Pressure.—The diastolic pressure is affected by build and age in a manner similar to the systolic pressure. Table 5, therefore, shows the average diastolic pressure arranged similarly to Table 2. It should be read in connection with Table 1. If a man is 6 feet tall and weighs 170 pounds we expect him to show a diastolic

years 1916 to 1919 by first-class, well-trained examiners. Looking across the table it will be noticed that the diastolic pressure increases about 1 mm. for each Build-group. Looking down a Build-group it increases about 7 or 8 mm. from the youngest to the oldest. In proportion to its size the range of diastolic pressure, both in Build-groups and in age periods, is nearly as large as in the systolic pressure. In the diastolic pressure there is no indication of the distinct rise which begins at age 40 in the systolic pressure. On the other hand, the total increase in diastolic pressure is just as great proportionately as the total increase in systolic pressure. For the total diastolic increase is about 8 mm. and this is one-tenth of the diastolic average, while the total systolic increase is about 12 or 13 mm. and this also is about one-tenth of the systolic average.

Ninety-five per cent. of the reports on diastolic pressure were furnished by our examiners in New York City and our med-

TABLE 5.
Average Diastolic Pressure—Healthy Men.
Build-groups.

Ages	(9)	(8)	(7)	(6)	(5)	(1)	(2)	(3)	(4)	(5)	All blds.
15-19	75	76	77	78	79	80	81	82	83	84	79.5
20-24	76	77	78	79	80	81	82	83	84	85	80.5
25-29	77	78	79	80	81	82	83	84	85	86	81.5
30-34	78	79	80	80	81	83	84	85	86	87	82.3
35-39	79	80	81	81	82	84	85	86	87	88	83.3
40-44	79	80	81	82	83	85	86	87	88	89	84.0
45-49	80	81	82	83	84	86	87	87	88	89	84.7
50-54	81	82	83	85	86	87	88	88	89	90	85.9
55-59	82	83	84	86	87	88	89	89	90	90	86.8
60 and over	82	83	84	86	87	88	89	89	90	90	86.8

pressure of 80 mm. at age 22; of 82 mm. at age 37; and of 87 mm. after he is 60 years old. Similarly if a man is 32 years old and 6 feet tall we expect him to show a diastolic pressure of 80 mm. if he weighs 140 pounds; of 81 mm. if he weighs 180 pounds; and of 85 mm. if he weighs 230 pounds.

Table 5 is based upon the records of 60,733 cases—all men—examined in the

ical referees and their immediate assistants. All of these were trained to take the diastolic pressure at the very end of the fourth phase, practically just before the beginning of silence. Whether this really shows the pressure in the brachial artery after the pulse wave has passed is open to discussion. It calls for the simplest technic and is determined more easily and regularly than any other point suggested for the diastolic pres-

sure. It is certainly more easily determined than the end of the third phase as the sounds pass into the fourth phase. In many cases our examiners at the Home Office find it difficult to determine this change of sounds, and in some cases the fourth phase is entirely absent, but no one finds it hard to detect the last sound. In some abnormal conditions, especially aortic leakage, the sounds continue to be very low readings, but these cases are unhealthy, have not been accepted as standard risks and are, therefore, not included in this study. The amount of pressure over which the fourth phase extends is about 2 to 6 mm. usually. As shown by Mackenzie,⁵ this range holds true for 95 per cent. of the cases. In 5 per cent. more it is from 7 to 10 mm. If larger, it is doubtful whether the examiner read the fourth point accurately. A wide cuff was used in all cases, and most of the readings were taken on the Tycos manometer. All of the risks were accepted at standard rates.

If the cases whose diastolic pressure is 95 mm. and upwards are eliminated, the effect on Table 5 is similar to that on the systolic pressure. The averages in the older age periods and the heavier Build-groups are much lower, but only slightly affected in the younger age periods and lighter Build-groups. But these changes are due almost entirely to the inclusion of risks with diastolic pressure of 96-100 mm., for there were only 175 cases which showed 105 mm. and upwards.

Since the diastolic pressure only began to be recorded in 1916, the number of deaths is quite small—only 543. One hundred and seventy-five of these were due to influenza and the war. Consequently it is not possible to draw any definite conclusions regarding the influence of the differ-

ent diastolic pressures on mortality. The material as a whole is good, for it shows a mortality of 85 per cent. of the expected when calculated by the Medico-Actuarial Mortality Table. When the deaths from influenza and the war, in number 175, are removed the mortality drops to 58 per cent. A diastolic pressure even between 70 mm. and 60 mm. did not seem to cause a mortality ratio appreciately larger than the average. Doubtless those cases with a very low diastolic were selected with care.

Those risks with a diastolic of 100-104 mm. showed a high mortality both with and without the inclusion of the deaths from influenza and the war. Build did not seem to make any difference, tho most of the cases were in the heavier Build-groups. Except for these very general conclusions, nothing more definite can be given.

Woman's average diastolic pressure is about 1 mm. less than man's up to age 40. Then for ten years it is about the same, but at age 50 it increases quite rapidly and remains 1 or 2 mm. higher than man's for the rest of life. The total entrants numbered only 5,276 and the numbers in the older age periods were rather small. The rise after 50, however, is corroborated by the similar rise in woman's systolic pressure. Perhaps menstruation is responsible for the lower pressures, both diastolic and systolic, among women younger than forty, but it seems hardly reasonable to assign the menopause as the cause of the higher pressures after 50.

For the benefit of those who are statistically inclined, it may be said that the frequency curves in all the groups in Tables 2 and 5 are very nearly symmetrical with a very slight skewness toward the higher pressures. The material is compact; the cases are snugly grouped around the aver-

ages and the deviations therefrom are small.

Pulse Pressure.—The pulse pressure is not a real measure, but merely the difference between two real measures, the systolic and diastolic pressures. As the diastolic pressure in health is approximately two-thirds of the systolic, the pulse pressure approximates one-third of the systolic. Actually that is not quite the proportion in healthy people. In the age period 25-29 the correlation between the systolic and diastolic pressure is $+ .71 \pm .01$ and in the age period 60 and over it is $+ .81 \pm .02$. These are excellent correlations, but not perfect. Among healthy people quite a number show variations in diastolic or systolic pressure which are not in these proportions. It has usually been held that these variations are more pronounced in the systolic pressure than in the diastolic. Without question the

TABLE 6.

Coefficients of Variation.

Age periods	Systolic	Diastolic	Pulse
15-19	8.3	9.1	17.7
20-24	8.7	10.4	17.5
25-29	8.6	9.9	17.1
30-34	8.8	9.7	17.9
35-39	8.9	9.5	18.1
40-44	9.0	9.7	17.3
45-49	9.3	9.9	17.7
50-54	8.9	8.9	16.8
55-59	8.4	8.1	16.4
60 and over	8.6	8.8	13.8
All ages	9.0	10.0	17.7

It will be noted that the systolic coefficients are smaller than the diastolic throughout. This indicates that the variations in the systolic pressure are smaller proportionately than those in the diastolic. While this seems to be the rule in healthy people, it cannot be asserted that it applies equally to diseased conditions. In disease the variations from the norm of health may be

TABLE 7.
Average Pulse Pressure—Healthy Men.

Build-groups.

Ages	(9)	(8)	(7)	(6)	(0)	(1)	(2)	(3)	(4)	(5)	All bds.
15-19	39	40	43	44	44	45	45	46	47	47	44.0
20-24	41	42	43	43	43	44	44	45	46	46	43.7
25-29	40	42	42	43	43	43	43	44	45	45	43.0
30-34	40	41	41	43	43	43	43	44	45	45	42.8
35-39	39	41	41	42	42	42	42	43	44	44	42.0
40-44	40	41	42	42	43	42	43	43	44	44	42.4
45-49	41	41	43	43	43	43	44	45	45	46	43.4
50-54	42	42	43	43	44	44	45	46	47	47	44.3
55-59	44	45	45	45	46	46	48	49	49	50	46.7
60 and over	46	46	47	47	48	48	49	50	50	52	48.3

systolic variations are larger in number of millimeters, but they ought to be about as large as 3 to 2. Careful study, however, indicates that the systolic pressure does not vary as much proportionately as the diastolic and this is corroborated by the coefficients of variation. These are obtained by dividing the standard deviation by the average and are a very good measure of the extent and quantity of the deviations from the average. The following Table 6 shows these coefficients for the final columns in Tables 2, 5 and 7:

larger in the systolic pressure than the ratio of 2:3 calls for.

The coefficients of variation of the pulse pressure indicate that its variations are nearly twice as large as those of diastolic or systolic. This is contrary to the usual idea, which, however, forgets that the pulse pressure should not vary more than about 1 mm. for each 2 mm. of diastolic or 3 mm. of systolic. With this peroration Table 7 is presented as showing the average pulse pressure in healthy men.

This is based upon the material used in

the preparation of Table 5. From the youngest age period up to 40, the average pulse pressure decreases 1 or 2 mm. Then it comes back to the starting level at age 50, and after that rises several mm. These fluctuations are due to the fact that the diastolic at first rises a little faster than the systolic and afterwards a little slower. In the younger age periods the ratio is 1:1.8:2.8 and in the older age periods it is 1:1.7:2.7. These are close to the 1:2:3 ratio. In fact, the relation of the last two terms is, respectively, 64 per cent. and 63 per cent. instead of 67 per cent. While these averages remain fairly constant, the greater variability of the pulse pressure is shown by the range between the extremes of high and low which is much greater than in the case of systolic or diastolic pressure. Thus in a series of accepted risks examined at our Home Office the lowest pulse pressure was 20 mm. and the highest 64 mm., a range of 44 mm., which is as large as the average pulse pressure for all ages. The range of systolic pressure in the same cases was from 95 mm. to 160 mm., a gap of 65 mm., which is about half of the average systolic pressure. The diastolic range in the same cases was from 50 mm. to 103 mm., a gap of 53 mm., which is only a little more than half the diastolic average.

By every known statistical test the pulse pressure is nearly twice as variable as the systolic and diastolic. This fact is not unreasonable if we realize that it is only the difference between the systolic and diastolic pressures and, therefore, partakes of the attributes of both these variables.

Its clinical significance and its value for life insurance are in doubt on account of its peculiarities. There seems to be no reason why a risk should be called unhealthy when the diastolic is 90 mm. and

the systolic is 110 mm., tho this gives a pulse pressure of 20 mm. and a ratio of 1:4.5:5.5, if this is the only abnormality found in the individual. Should anybody be considered unhealthy merely because the diastolic is 70 mm. and the systolic is 140 mm., tho this gives a pulse pressure of 70 mm. and a ratio of 1:1:2? Doubtless these unusual cases call for very careful examinations of the cardiovascular apparatus, but if there is no evidence of any impairment there, they should not be regarded as unhealthy. These extremes of pulse pressure, when they are less than 30 mm. or more than 54 mm., should be regarded as signals warning us to examine the cardiovascular apparatus with great care, but they should not be considered absolute signs of ill health.

We have now described the main features of the blood-pressure in health. It is about one millimeter higher in tall men than in short men. It is increased a millimeter or two by a meal, and several mm. by brisk exercise, but in both cases the effect is quite transient and it soon comes back to its previous level. Excitement, wrath, etc., increase it by several millimeters, perhaps thru the agency of the adrenals, and some time elapses before it returns to normal. Fear, on the other hand, usually lowers it, probably on account of feeble heart action.

Diet seems to have some effect in the long run upon the blood-pressure in health. Goepp⁶ noted this in a report which he made on accepted risks examined by the Provident Life and Trust during 1918. His average systolic pressures were a little lower than usual and he says: "The thought suggests itself whether the general reduction in the scale of living brought about by war conditions, particularly in the matter of eating and the use of alcohol, may not have had its influence on the aver-

ages obtained in the series." On this suggestion the healthy risks who were examined at the Home Office in New York were separated into the years of examination. The results are shown in Table 8.

TABLE 8.

Years of examination	Entrants	Average systolic pressure
1913	827	127.5
1914	973	126.0
1915	832	127.6
1916	829	125.4
1917	934	122.8
1918	883	123.7
1919	1,076	123.9
1920	1,203	125.4
1921	1,338	126.5
1922	1,424	124.6

This shows that the blood-pressure dropped decidedly in 1917 when we entered the war and stayed low during 1918 and 1919. It rose in 1920 and was still higher in 1921, but dropped again in 1922. It is uncertain whether these fluctuations were really due to changes in food and drink on a wide scale, but certainly the coincidences are interesting. Besides this report of Goepp's, the only other large collections of blood-pressures at all ages have been made by life insurance. One was made by Dr. Fisher⁷ in 1914 from the records of the Northwestern Life Insurance Company and the Mutual Benefit Life Insurance Company. Another was made by Dr. Mackenzie⁸ from the records of the Prudential Insurance Company for 1913-1915. The third was made Hunter and Rogers⁹ from the records of the New York Life Insurance Company for 1913-1916. In all of these tables the averages are given for years of age only without reference to build. Consequently they are a millimeter or two lower for the younger age periods than in the last column of Table 2, and a millimeter or two higher for the older age periods, for the younger age periods contain a large percentage of

lightweights with low pressures and the older age periods are mainly composed of heavier weights with higher pressures.

In other respects, life insurance has made a most valuable contribution to the study of blood-pressure, for the most popular portable manometer bears the name of Dr. Oscar H. Rogers, Chief Medical Director of the New York Life Insurance Company, who devised it.

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Estimation of Blood-Pressure.—In estimating blood-pressure the correct procedure, according to Fontaine (*Southern Med. Jour.*, December, 1922), is to place the patient in the sitting posture, or better, at rest in the recumbent position, for at least five minutes. The arm should be bare, the cuff a wide one, snugly adjusted. The instrument should preferably be one with a mercury manometer. If a spring instrument is used, it should at intervals be standardized. The blood-pressure should be determined by the method of auscultation, the first phase denoting the systolic pressure, and the fourth phase the diastolic pressure. At least three readings should be made.

WEIGHT REDUCTION—ITS INDICATIONS IN HIGH BLOOD-PRESSURE.

BY

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I have observed an almost uniform and, in the majority of cases, a satisfactory reduction of high blood-pressure during the process of weight reduction thru dietary control. Thereby the accompanying symptoms, notably shortness of breath, palpitation, edema of lower extremities, albuminuria (due to congestion of the kidneys), headache, distension with gas, difficult locomotion and painful feet are quickly relieved.

For previous discussion of this subject I would refer the reader to my articles, "Weight Reduction and Its Remarkable Effect on High Blood-Pressure," in the *New York Medical Journal* (June 21, 1922), and "Weight Reduction—Further Consideration of Its Effect on High Blood-Pressure," in *AMERICAN MEDICINE*, January, 1923.

The average reduction of systolic blood-pressure is 40 to 50 points, if the initial reading is around 200; 20 points if around 150.

Recognizing weight reduction as a therapeutic measure which may be used in cases of high blood-pressure, it becomes desirable to establish indications and contraindications therefor.

Among the indications are:

1. Most Cases of Recent Development.—When blood-pressure is not of long standing it can readily be reduced, and to advantage. This is especially true when due to over-eating. Some recent cases may be due to serious focal infections or acute Bright's disease, the cure of which will take care of the blood-pressure, and without its

cure reduction of blood-pressure would be of little use or perhaps injurious.

2. Conditions of High Blood-Pressure Stasis.¹—Here the heart is embarrassed by the load of work incident thereto. Lowering the blood-pressure enables the heart to regain compensation and quickly relieves both the heart action and the symptoms of impaired circulation.

3. Cases Due to Gastrointestinal Toxemia.—A low diet relieves the symptoms due to high blood-pressure and does away with the cause thereof. Proper diet is the best treatment for auto-intoxication, better in the long run than irrigations, colon implantations, Bulgarian bacillus or drugs.

4. Certain Cases of Myocarditis.—These are particularly incapable of the increased work required of the heart in high blood-pressure. In such cases, early weight reduction, before blood-pressure has increased very much, will prevent cardiac decompensation by lowering the blood-pressure. A normal diet will then maintain the improvement.

Group 1.—Illustrated by the case of Mrs. A. D. She had increased 12 pounds in weight during the year. At the time of her first visit, March 21, 1921, examination showed: Weight 172 pounds, 8 ounces, pulse 96, blood-pressure diastolic 104, systolic 170 and edema of the ankles. Result: The pulse dropped from 96 to 72 in the first five days. The blood-pressure dropped, systolic 170 to 150 in the same period. On May 2 (less than three months time): Weight 168, pulse 72, blood-pressure diastolic 88, systolic 118. Shortness of breath, palpitation, headaches, numbness of the arms and hands, pains in the joints, were relieved during the course of the treatment.

¹Elliot, Arthur R., *Journal A. M. A.*, May 28, 1921.

Group 2.—High blood-pressure stasis is illustrated by the case of Mrs. H. A. G. Examination May 27, 1922: Age 70, weight 159, blood-pressure diastolic 115, systolic 220, pulse rapid and very irregular. Orthopnea and dyspnea on exertion were present. She was unable to walk two blocks at a time. Result: August 16 (two and one-half months), weight 140, blood-pressure diastolic 94, systolic 164, sleeps in reclining position without difficulty, walked 32 blocks today—even climbs hills without shortness of breath. Report at date of writing (April 24, 1923), is that patient is still as well as at her last visit.

Group 3.—Intestinal toxemia is illustrated by the case of Mr. P. D. H. On December 22, 1921, examination showed: Age 53, weight 218 pounds 12 ounces, blood-pressure diastolic 90, systolic 210. Complaints: Drowsiness, headache, dyspnea on exertion, nervousness and irritability. In 28 days weight was reduced 16 pounds 12 ounces and his systolic blood-pressure 50 points. Headache, dyspnea and drowsiness were entirely relieved.

Contraindications:

1. Thickened, narrow arteries may require high blood-pressure to force the blood thru them and keep them open. Here we find the chief contraindication. Sooner or later such arteries will close in spite of high blood-pressure, or the heart will fail, but blood-pressure reduction would be injurious. The patient is between two fires. A recent case will illustrate this class. The patient suffered from dizziness, pitching to one side in walking, drawing of the face and weakness in the legs and arms. These attacks were of short duration. They were due to the fact that the lumen of one of the cerebral arteries was narrowed almost to the closing point. Reduction of blood-

pressure would increase the symptoms in this patient by further impairing the circulation in this artery.

2. Certain cases of angina pectoris would be injured by blood-pressure reduction. There is a narrowing of the arteries supplying the muscles of the heart wall. Therefore, the blood-pressure must be high to keep these arteries open and supply the heart muscle with blood.

In a recent case it was quite difficult to determine whether blood-pressure reduction was indicated or not. Mr. N. H. was 86 years of age, and had a stroke ten years previously, with resulting paralysis of arm and leg which still persisted. There was considerable evidence of poor circulation. A year before he had an ulcer on the foot which finally healed. During August, 1922, the latter condition returned. Blood-pressure was 210. There was considerable difficulty in breathing. I did not know whether reduction of blood-pressure would hasten or retard the healing of these ulcers. However, inasmuch as there was a tendency to spread, I resolved to try. I succeeded in reducing the blood-pressure to 170 and relieved the dyspnea and other symptoms. There was for a time further spreading of the ulcerated area but eventual healing and a marked improvement of the patient's general condition, so that it was better than for several years.

Conclusions.

In a general way it may be said that the more recent the high blood-pressure the more effective this line of treatment. Acute Bright's disease would be the chief exception to this statement.

When the condition is most closely related to over-eating the dietary control will be most effective.

There are cases in which the heart's action

has been very bad, not because the heart is inherently weak, but because the pressure with which it has to contend is more than it can stand. Signs of failure ensue. If this heart is relieved by lowered blood-pressure, it can then do its work without difficulty. Perhaps it may remain competent for many years and no further symptoms appear. These cases would seem incapable of relief and in them the results are the most remarkable of any I have seen.

As far as contraindications are concerned it may be said that, when they are present, high blood-pressure is the least of the two evils. The circulation in some vessel will be insufficient and serious effects ensue if blood-pressure falls.

"THE CONTROL OF THE CIRCULATION," BY SIMPLE PHYSICAL METHODS, AFFORDING RELIEF FOR MANY DISORDERS.

BY

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It is my purpose here to submit for consideration a clinical conception of vaso-motion and viscero-motion and their disturbances, as set forth in a book by Frederick Erdman.

I am not yet prepared to pass judgment on the whole matter, but my interest is growing in its suggestive significances which deserve open-minded attention and trial.

The author of the book—himself not a physician—will have rendered a service if the concepts and devices he presents shall prove as efficacious as they seem to me so far.

He would focus attention to the one working principle, common to all disease phenomena, and that is, first, imbalances in the blood-making, blood-propelling and blood-distributing mechanisms; second, imbalances in tone of the intestines, hence the collection of flatulence with distension and its effects on vasomotor tone.

He claims that correlations exist between arterial tension and tension in the intestines, disturbances of which are so significant as to be the major factor in certain infirmities—acute as well as chronic—the correction of which restores functional balance. It then remains to find out how this imbalance can be readjusted most economically and completely.

R. H. Paramore, in the London *Lancet* of December 16, 1911, concludes that the positive intra-abdominal pressure found is not dependent to any noticeable extent upon gravity, but is due chiefly to the compressing effect of the enclosing musculature. Thru the increase of this intra-abdominal pressure with the descent of the diaphragm in inspiration there is a rush of blood to the right heart. This, he says, is a powerful factor in the maintenance of general blood-pressure and may serve to explain the lower blood-pressure in women on account of the less actively functioning diaphragm. The pressure certainly tends to limit the distension of organs either by direct support or by its influence upon the circulation in them. This latter again has a material effect upon metabolism in the hollow organs, hastening and assisting it. Paramore concludes that the intra-abdominal pressure, even with the body at rest, subserves some of the most important functions of circulation and of metabolism.

Whether we can point, in any given instance, directly to the essential or primal cause or not, the effects of former disease

must be removed before health can be confidently restored.

While one may not accept in advance as always adequate the explanation or postulation offered by the author (F. E.), the principle of procedure he adduces constitutes a valuable auxiliary treatment.

The author also stresses personal observations which, similar to those I am told by a student of mine, Professor Boehm, also suggested, *viz.*, that the vasomotor and visceromotor distribution may be conceived as of three zones or segmental areas, and that in one or other of these zones there may exist states of overtension or subtension, differing from those in one or other, and that it becomes necessary in order to restore normal tension in the organism as a whole that the balance shall be restored in each or all. There will be found states of tonic spasm in muscles of the back irritated by gastrointestinal causes.

Erdman finds that the desired balancing effects can be secured, readily and sufficiently, by simple stimulation thru the application of either heat or cold—rather warmth or coolness—on the affected back muscles by manipulations which tend to raise surface warmth and thereby to bring about vasomotor and visceromotor equilibrium. By means of these manual and thermal applications or stimulations, or sedations, so near a poise can be restored as to contribute much toward restoration of local and general functional balance. The effect of this better blood distribution restores normal velocity and volume in the arteries, also equally venous return, bringing about prompter oxidation and detoxication. A feature which the author endows with large significance is the presence of flatulence in the intestines due to visceromotor constriction. The amount of gas serves as an index of vaso-tension and viscero-tension.

A constant production and propulsion of gas (CO_2) takes place in the stomach and intestines. Ordinarily this gives no indication of its presence and no trouble, but occasionally very much trouble—cramp, “colic,” distension, ballooning, pain being manifested in proportion to the vaso- or visceromotor tone present, or as the abdominal muscles are strong or weak. Intestinal cramp or local tonic spasm thus becomes an important clinical element which demands mitigation.

The phenomena of acute intestinal indigestion are such as dizziness, faintness, backache, bellyache, headache, nausea, “gone feelings,” and the like. When the rate of gas production exceeds the rate of absorption, or when it fails to escape, or reaches a situation where the gut contracts excessively, it then hurts. The origin of this expansible gas is intrinsic, due to irritability of vasomotor nerves, caused by fatigue, cold, worry, indigestion and the like. The rate of production is often prodigious, especially in those chronically or acutely weakened, notably in the psychopathic or neurasthenic. The gas is derived from the blood, from the blood-vessels of the gastric mucosa. It is readily controllable by stimulation or sedation thru expert touches on the muscles of the back at corresponding segmental levels. This is a well-proven means of relaxing intestinal cramp, spasm, and of causing the constricted ring to let go, *e. g.*, the pyloric, or the iliocecal orifices, or at the colonic flexures, the splenic, hepatic, etc. Colic in babies, which is often a pyloric spasm, is relieved in the same manner, as I have long taught.

Where arterial hypertension is found, the author claims, there is likewise evidence of hypertension in the tubular viscera, contractions of the circular fibers of the intestines, hence arise sections of flatulent distension.

When these are small and not noticed by the patient they can be determined by deep palpation and by percussion. Slight subjective sensory responses, tenderesses on deep pressure thus come to be revealed.

Overtension, and conversely subtension, occurs in both arteries and intestines, except in those quite healthy. Hence a state of high vascular tension is, in a way, dependent upon—certainly it is coincident with—overtone in the intestines. This flatulence is present, less or more, owing to constriction of a segment of the gut. It is at least sufficient to cause distress and acts as a starting point for clinical effort in diagnosis and relief.

When, moreover, arterial overtension is present there can also be demonstrated gaseous pressure in stomach and intestines by touch, light pressure or percussion.

Upon being removed, as is readily done by gentle strokings, alternated pressures on the areas of the back corresponding to segments in the cord, or even by the application of warmth—a warm hand applied often suffices—this will serve to relax the intestinal hypertension or constriction and hence the gas will pass along or become absorbed. Thereupon the arterial overtension will also promptly subside, and often to a lower degree than is usual, or to the normal. Where hypotension persists the application of cold “alcohol sprayed over the segmental area and fanned” will serve to constrict the vessels of the cord and raise the pressure.

An interesting observation by the author, repeatedly corroborated by me, is the reciprocal action and interaction between mild flatulence—often unsuspected—and changing states of arterial tension, as happened on my own person, from 140 to 104. Thereupon by the compensation treatment was restored to about 120. Also I have

observed this happened in others who were much similarly disordered.

The Three Divisions of the Spinal Cord or Vasomotor Zones, and the Parts They Control.

Erdman would visualize the body as of three vasomotor zones, in each of which anomalies of vasotonus may occur, the one differing from the other, even as direct opposites, whereby functional imbalance is induced, leading to impaired nutrition in the cell bodies of the cord of that segment, as well as in corresponding peripheral organs and structures.

The phenomena of vasomotor or viscero-motor imbalances include those which differentiate between those in the line of innervation via the lateral processes, (a) anteriorly to the viscera and beyond, and (b) posteriorly to the spinal blood-vessels, *i. e.*, the nutrition of the cell bodies in the cord at that level, or metamere.

Thus the blood content fluctuates; may be in excess in the one and inadequate in the other, or *vice versa*. This is illustrated crudely but plainly in the appended diagrams of the three zones of vaso-, hyper- or hypo-tension, in each of which a different or even a reverse state of tension or of subtension is observed to occur in disturbed states of health. Zone number one is from the sixth dorsal vertebra upward, including reflex circuits innervating the heart, great vessels, upper respiratory organs, the special sense organs and the brain; and, second (number two), is from the sixth dorsal to the lower lumbar, innervating the splanchnic areas, the digestive, the genitourinary, the metabolic in chief part; and the third (number three), the sacral segments, innervating the pelvic areas, the sacral structures, and lower extremities, to the end of the spine, etc.

In any one of these vascular zones may

occur anomalous phenomena, restricted clinically to that zone and also exerting a disturbing influence on the status of the organism as a whole. The adequate correction of any one may restore normal vasotension thruout.

The anomalies or disorders of vasotension thus become compensatory, in that overtone in the peripheral areas is accompanied by undertone in the vessels of the spinal cord, which tends to impair nutrition in those structures innervated by the intervertebral vessels, hence of the important cell bodies or subcenters; or the other way about, undertone, vasorelaxation in the peripheral areas, and overtone in the spinal vessels.

Blood-pressure readings taken on the arm may give puzzling results. The facts observed suggest that it is well to make these observations at the same locality (the upper arm) and depend on other indicia to determine the differences. Herein experience is the main guide, a judging by symptoms. When arterial hypertension exists in one zone, then hypertension or vascular contraction usually co-exists in the tubular viscera, and *vice versa*.

Many methods of clinical differentiation are described in the book. Anomalies of zonal pressure findings when they come to be verified by others should at least prove of use in explaining other findings. The facts and histories cited to me by Mr. Erdman are most interesting. He seeks for opportunities to demonstrate his diagnostic and treatment procedures to any physician earnestly seeking for truth and for human welfare. Next we come to the question of:

What and how much of the anomalies of vascular tension can be readjusted? The agencies employed are simple, gentle, seemingly unlikely adaptations of less or more temperature, applications also of pressures,

impacts, hand or finger pressures applied to spinal areas, either alternated or continuous, or better distributed. Gentle impacts, tappings on spastic structures are of well-known efficacy in releasing muscular over-tension or in stimulating and fortifying states of undertension.

While it was also known—as shown by Abrams and earlier by Chapman with his “ice bags”—that applications of cold or focal freezing can and does produce dominant effects on spinal centers, Erdman finds that equal or greater effects can often be produced by mild applications of coolness or warmth, but wide extremes being unnecessary. In certain conditions best results are obtained thru combinations of thermogenic and manipulative measures.

As stated, the author observes that blood-pressure findings taken at any one spot, *e. g.*, the arm, gives only partial and inadequate information, but serves as a point for departure.

Of course the practical question, the one on which clinical betterments depend, is, what are the normal and abnormal variants, what phenomenon demands correction in the instance? Thru experimental readjusting of the tonal variants at least no harm is done except delay till the essential or guiding facts become revealed.

Whatever else is, or is not accomplished, the effects thus wrought seem to bring about amplified nutrition in whatsoever cell bodies of the cord have suffered too much depletion. When adequate nutrition is achieved, then is the chief source of disorder or decrepitude reduced to a minimum. The time required to secure vasomotor equilibration may vary in accord with diverse factors. They include myotonus of the heart itself which can be influenced as well or better by these simple measures than by any other known agencies. Not till vasotonic poise

is established in the faulty zone can we expect to secure equilibration in the organism as a whole.

Summary By Frederick Erdman.

Those persons showing arterial hypertension require opposite spinal treatment from those with hypotension.

Brief local, cool or cold applications to the spinal muscles cause vasoconstriction; this will overcome arterial hypotension, but aggravate hypertension.

Hypertension of the alimentary tube by incarcerating gas and depressing the heart action may produce a low blood-pressure but still requires the same treatment as arterial hypertension.

Gentle applications of heat, or counter-irritation or manipulation of the spinal muscles, produce the most rapid relaxation when hypertension of the arterial or alimentary tubes exist. If the spinal application is too irritating it at once produces contraction of the arterial and alimentary tubes.

There may be arterial and alimentary hypertension in the areas of the body controlled by the upper half of the thoracic segments simultaneously with hypotension of the abdominal part of the arterial and alimentary tubes controlled by the lower thoracic and lumbar segments. These areas would require, therefore, opposite treatments.

The sacral segments may also require opposite treatment from the splanchnic segments, or from those of the upper thoracic.

The vascular apparatus, with or without cardiac complications, in any pathologic condition falls, therefore, into one of four classes:

(1) General hypotension of arterial and alimentary tubes.

(2) Hypertension in upper third of body simultaneously with hypotension in the middle or lowest third.

(3) General hypertension of the arteries. High blood-pressure with or without sclerosis.

(4) Hypertension of alimentary tube, except where extreme sclerosis exists in those of advanced years.

"Those in class are normal, provided there is a normal irritability of all nerve cells and a normal tension (tone) in all

arterial, visceral and skeletal muscles."

In all cases treated, even of the highest and lowest blood-pressures, all tonus should ultimately reach a systolic pressure of 120. Any other pressure constitutes an unnecessary load upon the heart, or induces a retarded circulation thru the brain and cord.

By relaxing arterial and alimentary hypertension many weak, dilated and leaking hearts have recovered. By overcoming anemia of the brain, due to arterial hypotension, a great variety of mental and nervous disorders have been entirely cured.

The brain is just as dependent for its nutrition as any other organ on a proper quality and kind and velocity of blood supply. The greatest menace to the public health, he claims, is the fact that so-called "nervous" troubles are so often disregarded until some serious organic trouble arises.

Persistence of hypertension of the alimentary or arterial tubes will sooner or later bring about a failing circulation and either cause the heart to stop or produce congestion of the brain, kidneys or some other vital organ. These are mere terminal phenomena of a process which may have been going on for many years. The final catastrophe, whether it be a chronic or an acute condition, is the end-result of the disease.

Just as restoring the cerebral circulation to normal after syncope produces a marked change in anyone's condition, so also overcoming anemia or hypertension of each part of the spinal cord produces striking and often extraordinary changes in the pulse, or blood-pressure, also in the condition and functional activity of any part of the body.

Unless the three divisions of the vascular system are recognized, any physical and many medical therapeutic methods will continue to be entirely empirical.

See summary of chronic conditions of the circulation in "Control of the Circulation" for diagnostic purposes.

If one has hypotension, a few minutes of the gentlest manipulation of the spinal muscles may cause a violent anemic headache and complete prostration.

Similarly if one has extreme hypertension of either arterial or alimentary tubes the slightest irritation from even a gentle massaging of the spinal muscles may cause a serious rise in blood-pressure.

Before giving a treatment it is necessary to determine whether the spinal cord is

anemic or hyperemic in each of the three divisions. This decides the kind of treatment required. Second, if part or all of the cord is hyperemic the degree of irritability of the nerve cells in each spinal segment must be determined in order to decide what amount of pressure will be required to produce the greatest effect on the blood supply of the spinal cord. If the blood-pressure is 170 or more all three divisions of the cord are hyperemic and "Prolonged Treatment" (see chapter: Back) then will manual pressure or warmth or mild counter-irritation be required. If the blood-pressure is high or if there is any excessive irritability of the sensory nerve cells, the spinal treatment must be extremely gentle. Otherwise the blood-pressure will rise or the pulse weaken or become more rapid. This is Class 3.

Class 1 is the condition of general hypotension. The blood-pressure may be normal, 120, subnormal or rarely if large amounts of gas increase the intra-abdominal pressure and the heart action is strong, the blood-pressure may be above normal. "The highest blood-pressure of any one in Class 1 was 170." Most typical cases of "neurasthenia" are in Class 1. If hypotension is suspected, the cold treatment of the spine should be used. It would bring the systolic and diastolic blood-pressure, the pulse, amount of gas, and the tension of the alimentary and spinal muscles to, or at least somewhere, near normal. This will be the result of treatment if properly given to those in all classes. If one or more of these indications are normal before treatment, they will naturally be of no value in the examination unless they are altered from the normal by treatment. In that case it

will prove that the wrong treatment has been given.

The middle third of the cord is always the area most likely to be anemic. Even if the general health is fair, hypotension may exist in the abdominal region with hyperemia of the uppermost and lowest thirds of the spine. The sacral third may be anemic also. This mixed condition of Class 2 is most quickly differentiated by applying the cold or the constricting treatment to one-half of the middle third and the relaxing treatment (see chapter: Manipulation) to the other half of the middle third, noting the blood-pressure and making a comparative palpation of the opposite (vertical) halves of the abdomen. This will determine whether the contraction and relaxation of the alimentary tube is nearer normal on the one side or the other. By reversing the treatment for the side which is nearer normal, the bowel tension in the two lateral halves of the abdomen will become alike and nearer normal than before treatment. All treatments should bring the condition toward Class 4 with normal tension of all parts of the alimentary tubes, as well as normal tension of the arterial tube unless it is recognized that the normal blood-pressure of 120 and 80 for all adults, with a pulse 72, to 60 when at rest. It will be impossible to classify when the heart is carrying a normal load. There will then be overtension in the arterial, alimentary or spinal muscles. The number of the pulse beats and the blood-pressure may be normal and yet the heart may be carrying a great and unnecessary overload if there is any hypertension of any of these sets of muscles. The contraction of the spinal muscles is simultaneous with contraction of arterial or alimentary tubes.



DECAYED TEETH IN UNDERNUTRITION.

The part played by decayed teeth in the production of an undernourished state is a much mooted one. One thing is certain: that a child whose teeth are bad or tender cannot masticate properly, and one whose breath is foul from the presence of putrifying food in the cavity of a decayed tooth has a just cause for an impaired appetite. "A tooth is either good enough to be filled or bad enough to be extracted." That malocclusion should be corrected goes without argument.—Dr. L. T. Royster (Southern Med. Jour.).

ESSENTIAL VASCULAR HYPERTENSION.

BY

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Essential vascular hypertension is a state of abnormally increased arterial tension. Its etiology is unknown, its pathology is unknown, its symptoms are no different than those of hypertension coexistent with well-defined pathologic conditions. Its prognosis is undetermined and it has no well-defined treatment, as a disease entity. For a diseased state which has been recognized at least 20 years, and one which is extremely common we must admit that the numerous investigations have not been fruitful.

While essential vascular hypertension is frequently described as a definite clinical entity, its diagnosis can actually be made only by elimination of an existing nephritis, cardiac or vascular disease.

The diagnosis of essential vascular hypertension is made by elimination and not by inclusion of pathologic evidences.

The Blood-Vessels.—Clinical and postmortem studies have long ago made it plain that essential vascular hypertension is not the result of arteriosclerosis. In the aged and emaciated we continually see patients with the most marked degree of arteriosclerosis and yet find the blood-pressure at a nearly normal level. On the other hand, there are many evidences which lead to the deduction that a long continued hypertension will produce arteriosclerosis.

The Heart.—Simple cardiac hypertrophy, such as is seen in the overworked athlete, is associated with a moderate hypertension. This was shown a number of years ago in the studies on 52 Marathon runners.¹ In

those subjects, young men free of advanced disease, we find that the height of the blood-pressure varied with the degree of cardiac hypertrophy. In some, where a cardiac murmur was present the hypertrophy was greater and the blood-pressure higher. The condition was similar to the cardiac hypertrophy of aortic insufficiency in which the blood-pressure is elevated. In these cases we have a true work hypertrophy of which the hypertension is part. While a work hypertrophy may not occur in the perfectly balanced cardiovascular system of a normal individual it certainly does occur where some visible or invisible defect exists.

The Kidneys.—Are diseased kidneys responsible for hypertension? At times they are and at times they are not. In the hypertension of eclampsia they are the offenders. Or when we find the systolic pressure in a boy of 13 at 190 mm. Hg. and a blood-pressure of 165 mm. Hg. in a boy of 17, both having nephritis, the unavoidable conclusion is that in these two patients hypertension is secondary to the nephritis or at least due to the same cause as the nephritis. On the other hand, I now have under my care a considerable number of other patients of varying ages suffering with nephritis who have as much or more albumin, casts, edema, and other equally significant evidences of nephritis with normal blood-pressures.

Chemical analysis of the urine must be interpreted with great caution and should be carried out over a long period of time. In weekly analysis of 24 hour specimens covering a period of a year or more in cases of hypertension with and without nephritis I find that there can be as much variation in one group as in the other. In this type of case the usual hospital studies are inadequate because the period of observation is

¹Barach, J. H., "Physiological and Pathological Effects of Severe Exertion," *Arch. Int. Med.*, April, 1910.

too brief to allow a correct conclusion as to the functional ability of the kidneys. It is for this reason that diagnosis and prognosis have often proved wrong. Kidneys which at one time and under certain conditions seem to show an inability to concentrate urine may at a later date show a distinct ability to do so. Phthalein excretion and water excretion also varies. Urea and chloride excretion varies from week to week and month to month. Nocturnal polyuria varies. These variations are too frequent and too great for the experienced clinician to allow himself to be too much swayed by the laboratory findings over a short period of time.

Albumin and blood-cells and casts must not be interpreted too hastily. My observations on Marathon runners, baseball players, football players, and in individuals after horseback have shown that even after a brief physical effort sometimes not lasting half an hour, all three may be found in abundance. These clear up shortly, but at the time cannot be differentiated from the evidences upon which we base a diagnosis of acute nephritis. Such findings indicate that a circulatory disturbance, whether functional or organic, temporary or permanent may in itself produce those evidences upon which we depend for the confirmation or elimination of the diagnosis of nephritis. Continued observations over a reasonable period of time will, however, lead to a correct diagnosis.

The Blood.—Biochemical findings in the blood of these patients are insignificant. Their values are usually normal.

The Capillaries.—Much has been said up to the present time, but little has been proved as to the part played by increased capillary tone and angiospasm in the production of hypertension.

Intoxicants.—Intestinal intoxication, in spite of the volumes written on the subject, is not yet a proven factor. Tobacco is far too universally used without leading to hypertension to be a very significant factor. All that has been said of diet, especially of the high protein and high purin diet will in the very near future be retracted.

Mode of Living.—The strenuous life, the sedentary life, the sensuous life, everything but the ideal life which no one lives, has been given as the cause of arterial hypertension and yet little has been proved. It is probably better for us to view man's reaction to his surroundings in a purely objective way. The individual reacts in accordance with his physiologic or pathologic makeup, which is the mainspring of his habits as well as his mental attitudes. These reactions are usually protective or compensatory. Often what we see in the reaction of an individual to his surroundings is not so much the cause of the disease which he develops, rather is it the effect of his cellular construction—even to the quality of his chromosomes.

The History of the Individual.—In the foregone I have pointed out that care is necessary for the correct diagnosis of essential vascular hypertension, also some of the pitfalls which may lead to an erroneous diagnosis. After eliminating the doubtful cases and bringing into this discussion only those which rightfully belong to this group we find a class of individuals in whom the findings at the physical examination and the laboratory investigations by present day methods reveal no strong evidence excepting that obtained by the manometric readings. I have, therefore, turned to a study of the life history of the individuals in this group and have found a certain continuity which seems important and which will per-

haps lead to a better understanding of this clinical entity.¹

Heredity.—In a group of 40 cases, 95 per cent. gave a history of cardiovascular disease in an immediate member of the family. In some instances three generations in the family who had been under my observation showed evidences of this organ inferiority. A man in my office today, age 67, suffering from cerebral angiospasm, gave the following history: Father died at 68 of heart disease. Mother died at 71 of apoplexy. One sister died at 59 of apoplexy. Another sister died at 53 of apoplexy. A third sister died at 51 of apoplexy. Brother died at 64 of apoplexy. Another brother at 68 of Bright's disease.

The Infections.—In a series of 68 cases of vascular hypertension, 41 per cent. had typhoid fever, 23 per cent. had chronic tonsilar infections, 13 per cent. had scarlet fever, 12 per cent. had diphtheria, and 7 per cent. had rheumatic fever. The others had malaria and syphilis. We do not find such striking figures in non-hypertension groups. Other chronic infections perhaps secondary to upper respiratory infections are notably present in these cases.

Endocrine Disturbances.—On studying the life history of female patients who show essential hypertension after middle life, one meets with some striking findings. Early in life these patients suffer chronic throat infections, at puberty they show colloid goiters, during middle life the married ones show a tendency to sterility and at the menopause or thereabout vascular hypertension. This sequence is a very common one in my experience. It indicates the combined effects of infection and endocrine disturbance as predecessors of hypertension.

The male is a relatively infrequent sufferer from goiter. In goiter clinics he is one out of ten patients. When the male child has diseased tonsils in early life he will not show a colloid goiter at puberty as his sister does. He will show the syndrome known as neuro-circulatory asthenia. He will have an irritable heart and an unstable vaso-motor system. He will have cold, wet and cyanotic hands and feet. He will suffer early fatigue, and he will show a nervous overreaction to all mental and physical stimuli. When middle life is reached his symptoms may be less striking. His senescence comes early and vascular hypertension is a part of the picture.

Prognosis in Essential Vascular Hypertension.—A man aged 67 whom I saw several days ago gives the history of having had a systolic blood-pressure of 190 mm. Hg. for the past ten years. He has been a sufferer of chronic tonsillitis all his life because, as he said, in his days tonsillectomy was not in vogue. His pulse during the past fifty years has never been less than 90 beats per minute. This man's life conforms to the male type of individual whom I have described. The prognosis in such a patient should not be based upon the height of his blood-pressure. Rather it will be determined by the organ inferiority of the individual. This organ inferiority manifests itself by a "break" in the heart, kidneys or cerebral vessels. Which organ will suffer decompensation first, will be determined by the inherited tendency of the individual, and by the effects of previous infection, injuries and strain. One who has suffered a meningitis, or a severe acute infection with delirium, or who has undergone a terrific mental strain, is more likely to show a cerebral decompensation. One who has suffered a pneumonia, diphtheria or rheumatic fever, during which the myocardium

¹Barach, Joseph H., "Essential Vascular Hypertension," *J. A. Med. Asso.*, December 23, 1922, pp. 2140-2143.

was damaged, will have a cardiac decompensation. One who has had a severe scarlet fever, repeated tonsillar infection with renal irritation or nephritis from exposure will, when the time comes, show a renal failure.

The pathologist may claim that the histologic picture of the myocardium shows regeneration of form. And that after a diphtheria or a pneumonia or rheumatic fever the heart muscle or the kidney or cerebral vessels show no evidences of morphologic change, yet the clinician knows that most of these patients recover slowly. Some never recover completely and the life history of these individuals if carefully reviewed in their latter years will indicate that at one time or another such damage was done to their organs.

In concluding, I would say that in the absence of other positive and striking etiologic factors in essential vascular hypertension, a study of the life history of these individuals will prove both interesting and profitable.

401 Jenkins Building.

Hypotensive Action of Tincture of Garlic.—Garlic has been used in popular medicine and been credited by old writers as possessing wonderful curative properties. During the last twelve years it has again come into favor. It possesses marked vermifuge properties, and it has given excellent results in the cure of pulmonary affections—tuberculosis, gangrene, whooping cough, etc. It has vaso-dilatory properties. The 1 in 5 tincture is administered in doses of 20 to 40 drops daily, in two or three administrations. No untoward effects have been noted during treatment with it. It is eliminated by the respiratory tract. Arterial hypotension begins usually in about thirty or forty-five minutes, rarely more slowly, and is maintained during the next day.—*Pharm. Journ.*

BLOOD-PRESSURE AS WE MUST COME TO VIEW IT.

BY

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Man was created with a body and a soul. The first, which consists of bones, flesh and fluids, are observable; each and every part can be seen and studied carefully. Not so with the latter, and especially one of its most important divisions, the mind. This is like air or electric force—we can feel its effects, but we cannot see it.

An epidemic is defined as something that attacks many at the same time and, of course, generally refers to disease.

But viewing the word from its definition, an epidemic may be anything that quite simultaneously attacks, or makes an impression upon the human being; a quickly formed mob for the destruction of property or life, a new fad that is originated and rapidly sweeps across the continent; these must be considered epidemics.

It must be admitted communications written or verbal are the main factors in influencing the mind of the average individual; a vast majority quickly accept the information as a fact, altho the person giving it may know little of the subject of which they speak.

The care of the sick has been well named the practice of medicine, and altho the most valuable information has been added to our knowledge during the past few years, still as yet it is far from perfection.

Viewing humanity as we must, everyone from a different angle, the fact that the same disease in different individuals may appear in a different manner, not only as

to symptomatology, but as to action upon different tissues, it must be expected that the time is far in the future when illness is to be put upon a positive basis. Therefore, we can only expect continued investigation to go on, and viewing the susceptibility to suggestion, of which doctors are no exception, the only solution of the affair seems to be a plea to use reason in receiving messages printed, verbal or written.

Taking up the subject of blood-pressure, it may be said that the epidemic is on the wane; the prognosis advanced by the enthusiasts have not been proven, except to a minimum degree.

We are given to understand that a high pressure means great danger to the individual. They are liable to death at any moment from apoplexy, a condition prognosed in many cases, but which has not yet arrived.

What do others say about this subject? In the *Journal of the American Medical Association*, May, 1919, Major Dana, Chief Cardio-Vascular Examiner during the late war, a man that made over sixty thousand examinations, says: "The more I study blood-pressure, the less sure I become convinced of any accepted interpretation of the test."

Sherlaw, *Illinois Medical Journal*, says: "There has been so much nonsense taught and written about high blood-pressure that I am constrained to draw attention to our extreme ignorance of the cause and consequences of raised blood-pressure." Further on in his article he says: "In fact, under all circumstances the blood-pressure, like murmurs, should not form the basis of an opinion, but should be one factor and that not the essential."

Might not the question be pertinent, was it not the teaching of such that has brought illness in the human being to a point where

it is said that fifty per cent. of all diagnoses are wrong?

Generally speaking, blood-pressure can be viewed from three standpoints: the systolic, diastolic and pulse pressure. The first indicates cardiac efficiency, the second the peripheral resistance, and the pulse pressure the difference between systolic and diastolic.

It is inferred that the heart is the central power station, exactly as a dynamo, and it is, but it must be remembered that it must have a power that will keep it in motion.

Viewing blood-pressure from an anatomical standpoint, we find the circulatory apparatus to consist of the heart and a vast system of tubes, known as blood-vessels.

The blood-vessels are composed of three coats, all of which, in part or entirely so, are composed of elastic fibrous tissues. If the arteries were fully dilated, the heart could not maintain the circulation, and there would be insufficient blood present; therefore, there must be and is a control that keeps these structures in a certain degree of contraction at all times. This contraction is, of course, regulated in no other means than thru the nervous system.

A normal state of contraction is interfered with due to four factors: the nervous system, the perivascular tissue, in other words, the outside support, the resistance to the flow of blood and the condition of the pumping station, the heart.

That a disturbance of the nervous system has a marked effect upon the normal state can be easily proven by observation after the use of such drugs as ergot, caffeine, musk, etc., drugs that act primarily upon the nervous system and will raise pressure. On the other hand, amyl nitrite, aconite, etc., which cause dilation and lower pres-

sure; this is brought about by a partial paralysis of the ganglionic centers.

But drugs are not the only means of influencing pressure; anything affecting the nervous system, thus producing stimulation or irritation, will cause contraction and raise the pressure. On the other hand, shock following severe injury will lower it.

But, and it is a very important consideration as far as prognosis is concerned, careful investigators claim that only about ten to twelve per cent. of high blood-pressure are liable to end disastrously.

The writer would not attempt to enumerate the different factors that might cause a rise in blood-pressure and known as functional, but the following case will serve as an example of many such:

Case 1.—Miss B., age 30. Very nervous, a practically hysterical condition was evident. Examination of the urine showed nothing pathological, except a great increase of indican and urorosein (due to a fermentation in the intestinal tract); she had a blood-pressure of 190. Calomel was ordered, followed by a saline, and bromide sodium, grs. twenty in elixir valeranate of ammonia, one dram, every three hours in water. In six hours or so the pressure was normal, or as soon as the intestinal tract had been thoroly evacuated, and the nerve cells relieved of irritation; the pressure continued at normal thereafter.

The following case is most typical of what can result from fear, altho this woman has more or less gas accumulation denoting intestinal fermentation:

Mrs. S., a very marked neurotic temperament. Without any explanation as to what it was for, or that there was no danger, she was asked to bare her arm that her blood-pressure might be taken. Systolic 195, diastolic 165. A prescription was ordered of iodide of pot. vini colch., etc., to be taken three times a day. Next day, twenty-four hours afterwards, it was again taken, being 165 and 135. At this time there was but little display of fear, but it seemed unreasonable that medicine could bring about

such a change in so short a time. Inquiry brought the statement that she had been unable to get the medicine, so had taken nothing. The next day, and no medicine as yet, it was 150-110; she was forty-seven years old; pressure has been practically normal since.

These are not exceptional cases, but conditions that can be found in a vast number of individuals that show a high pressure. It is true the disturbant factor may be trivial, but as with all other conditions that may be considered of a functional nature, it is a sign that something is wrong within the human machine and should be rectified lest it take on a permanent nature and a pathologic condition results.

Looking at the subject from the other side, or the pathologic aspect, we find a diminished lumen of the tubes due to thickening of their walls, endarteritis, atheroma, arteriosclerosis, as found in syphilis, rheumatism, and old alcoholics, or due to inflammatory conditions of the intervascular tissue as in chronic interstitial nephritis. It is this class of cases that should be given careful consideration; when the pathologic change has been fully established, it is a grave question whether a normal state can be brought about, but life may be prolonged for years with very little danger of arterial rupture-apoplexy. Summing up the foregoing, the following conclusions may be safely arrived at:

1. High blood-pressure is due to three factors: a thickening of the arterial walls, something acting as an impediment to the normal flow of blood, or contraction of the vessels due to some irritation acting thru the nervous system.

2. The primary cause may be relieved or entirely removed, yet pressure continues high. This may be accounted for by a hypersensibility or irritability of the nerve cells, and due to some reflex cause, external or internal.

3. Blood-pressure should be considered as a symptom, and not a disease, exactly as

heart murmurs or temperature; it may mean much or little as far as the life of the patient is concerned.

4. Taking blood-pressure should be routine of all cases of an obscure nature and especially of anyone over fifty years of age.

5. In every case of high pressure, the phosphatic index should be a routine procedure. In those cases where it is found above normal (the precipitate in a practically solid condition), even tho pathologic changes be present, the most brilliant results will follow the use of drugs that relieve nerve or ganglionic irritation, thus allowing the vessels to become dilated to as near their normal caliber as possible.

(The phosphatic index is made from the second urine passed in the morning; it estimates alkaline phosphate output and shows nerve cell metabolism.)

6. A guarded prognosis should be given in high pressure, it must not be forgotten, as many people have been scared to death as have died of apoplexy. The control or the reduction of high blood-pressure should be looked at from four points: (a) Removal of any factor as far as possible that is reflexly or otherwise causing irritation of the nerve cells or neurones and acting on the ganglionic vascular centers. (b) Promoting absorption as far as possible of intervascular substances or accumulation within the walls themselves. (c) Regulation of diet, in the hopes of checking further accumulation in the muscular walls of the arterial system. (d) Attention to the heart in case of disease of that organ.

The first indication is met by ascertaining the degree of nerve metabolism indicated with the phosphatometer. A plus index (solid above N. P.) is positively indicative of neuronic irritability and sedatives will bring about a satisfactory reaction, thus reducing the tension in the vessels.

Absorption of inflammatory exudate calls for alteratives, altho the least medicine used in these cases the better for the patient.

Regulation of diet should be carried out as far as food is concerned that is known to be rich in uric acid and other elements that by chemical changes are converted into such as oxalates and nitrogen-bearing sub-

stances. Red meat, asparagus, tomatoes, shell fish, rhubarb and highly-seasoned dishes should be partaken of sparingly.

But one thing should ever be kept foremost in the physician's mind—don't starve the patient. More damage has been done people with high blood-pressure by what is termed the starvation method than that produced by the high pressure.

The heart, of course, must receive attention, but as the case should be treated as indications result, no fast rules can be laid down.

Medicinally the writer has found that bromarsarum (bromine, gold, arsenic) best meets all three indications. The bromine acts not only as an alterative, but greatly relieves the nerve cell irritability; gold has a similar action to mercury or potassium iodide—it promotes absorption of inflammatory exudate; arsenic not only acts as a powerful alterative, it enriches the red cells and to some degree acts on the nervous system as an antispasmodic Bromarsarum, commencing with ten drops three times a day in water, the dose should be gradually increased one drop a day to twenty. At first, the action is more or less slow, but in two or three weeks the phosphatometer will show the precipitate (alkaline phosphates) lessening, also a lower pressure.

A typical case as an illustration:

Case 2.—Dr. W., age 60. Feeling a fulness in the right side of the head, dizziness ending in epistaxis. Examination of the urine showed interstitial nephritis, with a phosphatic index 160 per cent. plus. Altho the doctor had noticed the increase of urine for some time, he had never consulted anyone nor even examined his own urine or condition until the nosebleed occurred. The heart was in a very serious condition, all valves seemed to be involved; the blood-pressure was 210. Advice was given not to stop the bleeding, unless it markedly increased, as it was nature's effort to prevent a rupture in the brain. Bromarsarum was ordered in the dose heretofore mentioned. In ten days the pressure was 190; all the

distressing symptoms: Dizziness and fulness had disappeared; epistaxis had not recurred; he died of heart disease ten months later.

The following case, occurring in his father, is reported by Dr. Chauncy P. Smith:

Interstitial nephritis of twelve to fifteen years' standing. Altho the heart was not seriously involved, breathing was more or less interfered with for a long time; these attacks bore no relation to food or time of day, but accompanying them was a great accumulation of gas. Nitrite of amyl gave relief, its use being quickly followed by marked eructations of gas; this medicine he had carried with him constantly for ten years or more, using it at times once or more daily. Blood-pressure was 180, and this the only consultation given him for about three years. A phosphatic index was taken and registered 175 per cent. plus. He was placed on bromarsarum in the dose heretofore mentioned. At the end of four weeks the index was practically normal; pressure 155; all symptoms had vanished. His wife reported he had not been feeling as well in five years.

In conclusion it might be stated:

High blood-pressure is an associate symptom that conveys an important message at times, but great judgment and reason should be used before coming to definite conclusions.

In syphilis, especially during the tertiary stage, accompanying interstitial nephritis, those who have suffered from rheumatism for a long time, and in those who have used alcoholic beverages to any extent, high blood-pressure should always be looked upon as a very grave and unfavorable symptom and medicine used with other measures to minimize the tension on the vascular walls.

Nerve metabolism, as will be shown by the phosphatometer, should be a routine in all cases. When it is plus, as is universally the case, sedatives in the form of alteratives will not only reduce the tension, but assist in the absorption of inflammatory or other exudate in the walls of and around the vessels.

437 Franklin St.

BLOOD-PRESSURE IN INFANCY AND CHILDHOOD.

BY

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From the rather meagre mass of scientific data concerning blood-pressure in infants and children and from a large volume of counter-existing opinions and observations we detach certain well-formulated and practical facts. For in spite of these differences in opinion the subject is one of rare interest and of great importance dependent, of course, upon the skill, knowledge, patience and diagnostic experience of the observer. The development of the heart, of the large arteries and of the constantly forming and branching capillaries cause a quite different type of circulation in infancy and childhood than that of the adult. Up to puberty the heart is relatively small, the large arteries relatively wide, while on the contrary at puberty the heart is large and these vessels relatively narrow. In consequence of the former condition the blood-pressure of the large arteries is lower (Landois). In other words, blood-pressure resistance is in consequence of an approximate breadth of the cardiac orifices and of the narrower lumen of the blood-vessels (Thiemich). Briefly, blood-pressure in infancy and childhood depends as in adults upon four main factors:

1. The contracting force and rate of the heart.
2. The peripheral resistance of the arterioles and capillaries.
3. The elasticity of the vessel walls.
4. The character of the blood as to volume and viscosity.

The cardiac output is, of course, very small in children and less in infants and in association with this the capillary system to be filled is very limited as com-

pared to the postpubertal age, owing to the relatively larger, more elastic and distensible arterioles and capillaries found in children. The peripheral resistance is less marked than in adults and the vessel walls are in a less stable state of equilibrium. This simply means that the systolic blood-pressure is a more direct representative of the work of the heart than in one of much older age. The vasomotor system is one of the main factors causing these variations in blood-pressure in the very young, while volume and viscosity seem to be of little importance. Blood capillaries nourish the body processes and they are a strong factor in the dynamics of circulation. Capillaries, venules and arterioles respond to direct and to indirect chemical stimulation thru the intervention of nerve fibers (Hooker). Krogh has observed that tissues devoid of many capillary vessels become occupied by them as soon as such tissues become physiologically active and that vessels invisible at first make their appearance in large numbers and admit of relatively large streams of blood. He has, furthermore, noticed that capillaries previously present increased in size, but that a fine capillary of uniform size in any given tissue undergoes no noticeable decrease in size from repeated branchings. We may then formulate certain other rules also:

1. That blood-pressure is governed by the local needs of the tissues for chemical control of the capillary blood.

2. That the capillaries and veins are under the control of the central nervous system; the peripheral resistance both functional and static include capillaries, arterioles and veins.

3. That the effective blood volumes, both fluid and corpuscular, alter in a marked degree.

Furthermore, Lister in 1858 proved that the capillaries have power independently of changing their calibre, while later observa-

tions show that nerve impulses along vaso-motor fibers control the calibre of the arterioles, capillaries and venules. These vaso-motor fibers are regulated by the central nervous system and are both vaso-dilators and vaso-constrictors. Thus it can be readily appreciated that where quick adjustments of blood supply are constantly demanded this nervous regulation plays an important part, a very important part, in infancy and childhood. The blood normally must flow in and out of the capillary vessels constantly and equably under a given pressure and with a definite velocity, conditions of course, made possible by the cooperation of the heart and blood-vessels (Brubaker). Strong emphasis should be made of the fact that the blood in the arteries, veins and capillaries does not flow thru rigid, horizontal tubes under a uniform pressure, nor does it flow thru a series of branching and again uniting tubes with rigid walls under a steadily acting pressure but it flows thru a tube with elastic walls under an intermittently acting pressure (Brubaker). Blood-pressure, therefore, and I repeat to strengthen the point, is the result of the driving power of the heart and of the resistance offered to the forward movement of the blood in the terminal vessels. According to physics this pressure is universally proportional to the diameter of the vessel and is, therefore, least in the large arteries and veins and greatest in the arterioles and capillaries. When we remember that the capillary beds can be largely emptied or packed with corpuscular elements or plasma thru the vasomotor system and that this great system is never properly developed or organized at least until the child is eight or nine years old when the brain reaches its full growth, when we appreciate the great emotional phenomena seen in infants and children we realize then the uncer-

tainty of blood-pressure readings in the very young. Should there be any cessation of the pumping action of the heart the elastic walls of the arteries would recoil and force the blood into the veins with a resultant fall of pressure, which situation under normal conditions is approximated during diastole. It follows, therefore, that an increase in the rate and force of the heart-beat always follows an inhibition of or a diminished activity or tonus of the cardioinhibitor center brought about by nerve impulses from the cerebrum such as emotional states or transmitted from different regions of the body thru afferent nerves their terminals being stimulated by physiologic or pathologic conditions such as gastroenteric conditions. Blood-pressure is furthermore influenced by the red cells which occupy the central while the white cells occupy the peripheral portion of the blood stream, the white cells adherring to the sides of the vessel. Between the portion of the stream occupied by the red cells and the wall of the vessel there is a clear still layer of plasma, the result of the adhesion of the plasma to the wall. It is this feature which gives rise to the friction between the successive layers of the blood stream, the resistance of the blood flow and the development of blood-pressure. This friction is greater in the small than in the large vessels. Blood-pressure may be further defined then as the pressure exerted radially or laterally by the moving blood stream against the sides of the vessel.

To illuminate the previous part of this paper I submit a *pot pourri* of many opinions from many countries.

While the child's pulse is rapid and high the blood-pressure is lower than in adults and with rising age the number of pulse beats is lower. The blood-pressure mounts so that at puberty it reaches about the same height as that seen in adults (Katzenberger).

Physical factors in the patient are of great influence, causing a transitory rise of from 40-60 mm. Hg. (Faught).

Blood-pressure clinically interpreted consists of a more or less constant pressure, the systolic and the diastolic. By careful manipulation both the systolic and the diastolic pressures can be accurately taken (Murray and Melvin).

Blood-pressure rate is influenced by nitrogenous retention, oxygen deficiencies, CO_2 excesses, lactic acid and phosphates as well as bacterial toxins in the blood stream (Faught).

Flatulence and digestive disturbances often resulting from substitution of carbohydrates and fats with rapid weight increase are other influences (Strouse and Kelman).

Toxins generated in the body thru faulty metabolism are the chief causes of hypertension in children (Parker).

In little patients with hypertension and with slight or no impairment of renal function marked variations in blood-pressure occur (Strouse and Kelman).

Increase of systolic pressure is seen in aortic regurgitation, cardiac hypertrophy and chronic interstitial nephritis; in the latter two conditions the pressure is often high (Dever).

The blood-pressure of immature, ill-nourished children is lower than with the normal. Many interesting facts are noticed in blood-pressure readings among small and large children. In the latter the pulse rate is lower than in small children and in the newly-born infants the pulse is slower with a relatively large body length. It follows, therefore, that probably the stronger growth and improved metabolism are of enormous importance (Volkmann).

Wolfensohn-Kriss found that the blood-pressure rises parallel with the body length and that it changes with the body weight as well as with the body length quite independently of the age of the patient.

Sladkoff made some interesting observations on the systolic blood-pressure in infants in the first eight days of life.

- 1 day of life 59-64 mm. Hg.
- 2 days of life 62-64 mm. Hg.
- 3 days of life 63-68 mm. Hg.
- 4 days of life 67-70 mm. Hg.
- 5 days of life 69-74 mm. Hg.
- 6 days of life 74-78 mm. Hg.
- 7 days of life 76-78 mm. Hg.
- 8 days of life 79-80 mm. Hg.

Oppenheimer noticed a rise of 10 mm. Hg. during an emotional attack in a child with, however, a quick return to normal after the emotion had passed. He also found a rise thru body movements in consequence of psychic factors acting upon the seat of the motor nerve centers.

Some authors believe that the blood-pressure in older children is the same as in adults. Romberg, however, finds a difference of between 115-125 mm. Hg. He maintains that the weight and height exert no influences but that the muscular development of the heart and its size, the breadth and flexibility of the thorax are of great importance. Nervous influences he says play no rôle whatsoever and that the height of the systolic blood-pressure reading gives no indication of the normality of the circulation.

Oppenheimer, Eminet, Sladkoff and Wolfensohn-Kriss agree that blood-pressure differs for certain ages, types and between the sexes.

Cook believes that blood-pressure is an index of improper nourishment and often of too small an amount of food. He found that with infusions of normal salt solution the blood-pressure was not appreciably raised but that there was a temporary rise after the insertion of the needle.

Another author believes that blood-pressure determination is influenced by certain physiologic factors such as the age of the child, its weight and in children of same age it varies according to height. The influence of sex, he thinks, is less than in adults.

Oppenheimer found that the blood-pressure showed a decided drop after deep inspiration in children and that in healthy children a deep expiration on the other hand presented a decided rise.

In nurslings according to Oppenheimer the blood-pressure was but little influenced by the rise or fall of the pulse probably due to the small amount of food taken. A similar condition was seen in older children by Trumpp and himself.

And as a delayed voice from war times Curschmann remarks that children nourished during the war time period in Germany had about the same systolic and diastolic pressures as in normal times.

Children in good circumstances have a higher systolic pressure than those among the poor. It is also higher after a vacation. Urine tests are necessary before tak-

ing blood-pressure readings.

The blood-pressure and the pulse differ in sleep, when they are low, and on awakening for the rise in both takes place as the sleeper awakens and is even higher than it was before the sleep (Oppenheimer).

Judson and Nicholson believe that blood-pressure readings will permit a means of determining the physical tone of a large number of children who are below par but have no demonstrable pathologic lesions.

In little patients suffering from varied emotional conditions Hensen advises many readings taken on the same subject over a lengthened period of time.

Further observations seen in figures:

After food Hensen found a blood-pressure of from 15-25 mm. Hg. higher than normal and Oppenheimer verifies this but found that it returned to normal after 2-3 hours.

Oppenheimer found that the ingestion of liquids by children caused a systolic rise of from 5-10 mm. Hg.

The blood-pressure may rise 20-30 minutes after a meal but may fall again in $\frac{3}{4}$ to $1\frac{1}{2}$ hours later. Strouse and Kelman have also observed that this pressure rises after exercise in proportion to the muscular effect.

5-15 mm. Hg. was the systolic rise Hensen noticed in the evening over that of the morning reading.

Hensen also remarks that blood-pressure may differ in the same individual at different times. This difference may lie between 10-12 mm. Hg. or even between 40-60 mm. Hg. in one day.

Cook found that after giving 10 drops of whiskey in five ounces of milk that there was a rise of 12 mm. Hg. in 15 minutes thereafter, and that the regular administration of stimulants seemingly maintained a constant blood-pressure rate.

(A) Blood-Pressure Varies As to Age.

Specific Indications.—Trousseau believes that changes in blood-pressure begin from the third month of life. Gerhardt, on the other hand, thinks that this change, at least markedly, takes place only after the fifth year.

The blood-pressure rises gradually from the first to the thirteenth year, but from the thirteenth or fourteenth year on it mounts swiftly (Katzenberger).

The systolic pressure in 8-year-old boys lies between 90-100 mm. Hg., the diastolic

between 50-60 mm. Hg. In 9-year-old boys the systolic lies between 85-110 and the diastolic between 50-75 mm. Hg. (Curschmann).

Salle found in 9-10-year-old boys a systolic pressure of around 130 mm. Hg.; in 12 to 13-year-old boys one of about 138 but authors in general do not agree with these high figures.

(B) Sex.

Vierordt claims that the pulse rate and the blood-pressure changes between the two sexes begin at about the fifth year of age. Seitz at about the ninth year.

At every age the pulse rate is higher with girls than with boys.

Wolfensohn-Kriss finds that girls and boys of the same age and weight have identically the same pressure rate and that the size of the individual is more important than the sex.

(C) Contagious Diseases.

Friedman in 1893 found in observations upon 63 children suffering from diphtheria that when the pressure fell below 75 mm. Hg. the prognosis was unfavorable; while a reading of between 65-60 was looked upon with alarm (Hill); and Rolleston noticed that diphtheria with albuminuria caused a decided pressure drop.

Durand-Viel in 1903 in 55 children observed that the blood-pressure fell in every form of diphtheria, more marked in older children and in the more severe forms of the disease.

Rolleston believes that in scarlet fever with marked albuminuria there is a distinct systolic rise.

(D) Position.

In children blood-pressure are dependent upon the position in which the patient lies. Neu found that in the upright position the pulse and blood-pressure are higher than in the lying, it changes also when the legs hang down or are extended horizontally; also when the patient changes from a sitting to a horizontal position.

(E) Value.

Weigert in 1907 in blood-pressure readings on 46 children considered them of no value and Brickner in 1909 after examining 200 children came to the same conclusion.

Hill in 25 cases of gastroenteritis in children came to no definite conclusion as

to their importance.

Just a word as to hypotension:

Hypotension is seen in conditions of anemia, pneumonia, shock, hemorrhage, malnutrition and in mental and physical depressive states. A distinct systolic fall indicates a weak myocardium, a failing heart compensation—also an instability of the central nervous system. In intestinal intoxications of low persistent order the blood-pressure falls but soon rises again from psychologic influences. Hoobler has observed that in children suffering from tuberculosis there is a persistent low pressure when the patient first reaches the clear, cold outdoors air but that this pressure rises again within 2-3 hours if the patient remains in the open. It remains at normal just as long as he remains outdoors. It was noticed that the more advanced the tuberculosis the lower was the blood-pressure indoors and the higher the rise outside.

Blood-Pressure Readings.—Of the two methods of blood-pressure reading that of auscultation and of pulse palpation there is great variance of opinion as to which one is the better.

Cook, for instance, believes that the palpation of the pulse is remarkably deceptive as an indicator of actual force and places but little reliance upon blood-pressure alone.

Katzenberger advises that observations be made on the radial pulse in infants and children and it is best he thinks to listen to the heart-beats as well at the same time.

Hill observes that the reading by auscultation is slightly higher than that taken from the radial pulse.

Auscultation versus Palpation.—Furthermore, there is great diversity of expression to the question whether auscultation or palpation of the radial pulse should be the more extensively employed in infancy and childhood.

Katzenberger found that in the many investigations which he made the results obtained thru auscultation differ but 8 mm. Hg. from the radial pulse palpation—quite a different situation than that found in adults. In fact, many times the systolic readings from both methods were the same.

Similar observations on diastolic readings have apparently not been made.

I have found it quite impossible to take the diastolic blood-pressure accurately thru palpation and in young infants and children have often been unable to detect it even thru auscultation. Bendix remarks that it

often requires long practice to read the diastolic murmur in children at the ages of 5 and 6 years even in sleep. With the ordinary observer without suitable apparatus but with a large fund of experimental knowledge skilled palpation of the pulse and a deep-seated understanding of disease, of dietetics and hygiene is of great importance. The greater dependence should be placed on the tactile sense, rather than on auscultation it seems to me, which sense is, however, more acute in one physician than in another, for with advancing years the auditory sense organs for auscultation become less acute as Parker so strongly points out.

In my own experience brachial pulse auscultation for systolic readings in very young children has seemed to me unnecessary for at these ages the auscultatory and palpable pulse readings so nearly approximate.

Tones Heard.—Murray, Melvin, Katzenberger and others recognize in general 5 phases of sounds heard thru auscultation altho it is not always possible in children even less so in infants to hear the sounds plainly. Different kinds of tones are heard under different cuff pressures, from different instruments and with different psychologic states of the little patient.

In adults while certain sounds are practically heard constantly, in young children on the contrary tones at one time may be pitched high, at another lower or even not heard at all (Katzenberger).

The Cuff.—The question again of the size of the arm cuff has provoked much comment. Von Recklinghausen finds that the small cuff gives a reading of 15 mm. Hg. higher than that of the large one.

Martin, Otfried and Muller believe that for all purposes the 10-15 c. m. sized cuff fulfills all practical purposes.

Sahli, Fellner and Rudinger choose a 5-6 c. m. cuff. A cuff of 9½ c. m. is used by Katzenberger.

For very young children I use a narrow, for older children a broad cuff.

Possible Mistakes.—Bitter experiences have followed my early use of this cuff, for it should be placed one inch above the elbow, its pneumatic portion pressed against the line of the brachial artery. The small disc of a stethoscope is placed between the 2 condyles of the humerus at the elbow where the artery is only overlapped by the integument and fasciæ. Inaccuracies due to the slipping of the cuff and to muscular contrac-

tion or development have been in my experience not more than of 5 mm. Hg. Other conditions tend to inaccuracy for at the moment when on palpation of the radial pulse it cannot be felt the lumen of the brachial artery is not fully cut off, the cuff pressing on it brings but a show of resistance and the pulse wave only is affected. For in reality we do not measure the maximum pressure but some other kind as Weiss suggests.

Thigh readings can be undertaken in highly nervous and in erratic patients, but should later, when the child is quiet, be substantiated by the arm pressure.

Of the type of apparatus used by observers abroad and at home I shall not speak. A Baum instrument with a vertical tube filled with mercury on both sides of which are upright panels measured and numbered suits me admirably.

Before applying the cuff the little patient must be in complete relaxation in order to avoid a possible systolic error of from 5-15 mm. Hg. due to general muscular contraction or to increased abdominal tension according to Faught.

Also before applying the stethoscope I find it wise to instruct the patient to first put the arm on stretch. A too long application of the cuff, a too close pressure on the artery, a too rapidly repeated or a too prolonged compression at one sitting produce at times a marked systolic rise while on the other hand fatigue causes a distinct fall.

The half-lying position is the best one for auscultation reading, for many times it has been noticed that in the sitting position there is a systolic rise. Readings had best be taken midway between the meals.

In my practice I have chosen to follow as best I can the following charts of Curschmann of both girls and boys in health as to systolic and to diastolic pressures by auscultation. I have never been quite able to coincide with his figures but an error of from 5-10 mm. Hg. or more has not worried me.

Boys.

Age	No. of Cases	Diastolate	Systolate
8	9	53	92
9	13	61	96
10	26	61	95
11	39	68	97
12	29	57	97
13	25	60	104
14	9	57	104

GIRLS.

Age	No. or Cases	Diastolate	Systolate
8	—	—	—
9	22	61	97
10	36	62	93
11	59	66	98
12	48	65	100
13	54	72	100
14	45	72	103

Conclusions.—In spite of confusion, counter opinions already mentioned and the comparative newness of the subject we are yet able to draw certain well-defined conclusions relative to blood-pressure in childhood, namely:

That blood-pressure readings are of great diagnostic, prognostic and therapeutic value in:

A. Cardiac disturbances such as are generally seen in myocarditis, endocarditis, aortic stenosis and in cardiac hypertrophy.

B. Renal disturbances as in acute and chronic nephritis.

C. Malnutrition and allied conditions which include gastrointestinal disturbances, fermentations and intoxications.

Blood-pressure readings in brief will aid us in maintaining a constant well-balanced diet, for proper nutrition, hygiene and parental care assist greatly in defending our little patients against any and all diseases. And the much-discussed and dreaded arteriosclerosis with its far-reaching sequellæ does not logically begin its devastating course in adult life as many would have us believe, but its poisonous seed is sown in young childhood, yes even in infancy. Finally, the relief of high blood-pressure in infancy and childhood requires no drugging, no faddism but the intelligence of the physician in adding to the diet of even the very youngest of our little patients a well-balanced food ration comprising among other essentials raw and cooked fruits and vegetables and unpasteurized raw, clean milk.

PROGNOSIS IN HYPERTENSIVE DISEASE.

BY

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The vital importance of all factors concerning the ultimate as well as the immediate prognosis of such a prevalent symptom-complex as hypertension can scarcely be overestimated. From an economic standpoint it occupies a most important position. The degenerative changes in the cardiovascular-renal system, associated with hypertensive states, rank next to tuberculosis as a cause of death in the United States, and as a cause of early decadence take precedence over all other diseases. When we consider the general tendency to progressiveness of hypertensive disease together with the fact that in its early stages it may give no subjective evidence of its presence, and may remain insidious until serious and irreparable cardiovascular damage has been wrought, we can readily appreciate the desirability of realizing such factors as may lead to caution where indicated, treatment carefully directed against the weakest link in the cardiovascular-renal chain, and regulation of the latter years so as to produce maximum efficiency without reducing the term of life expectancy.

The prevalence of hypertension is nowhere better indicated than by Janeway, who found 11.9 per cent. of all his cases of internal disease (7,872 patients) with systolic blood-pressure above 165 mm. of mercury. Of these, 870 patients, 63 per cent. were men and 37 per cent. were women. Janeway found at the end of the nine-year period the number of men dead were 6.2 per cent. more than living; women living were 35 per cent. more than dead. Thus 20.6 per cent. more men died than

Sympathetic Ophthalmia.—Wright reports good results in *South Med. and Surg.* (Dec., 1921) from the use of benzosalin in sympathetic ophthalmia. In one case, the affected eye would respond readily to the treatment, but each time benzosalin was discontinued, the eyes would become inflamed until the diseased tonsils were removed.

women. This experience is confirmed by all observers. Women bear arteriosclerosis, which, as will be noted, accounts for the majority of hypertension cases, better than men. In no other process does inheritance, the character of the individual, his disposition, temperament and circumstances play such an important rôle. In hypertensive arteriosclerosis there is often a single factor, cardiac, vascular or renal, which neglected will produce death, and heeded may prolong the life, as well as increase the range of usefulness of the individual.

To quote Humphrey from *Old Age*: "The first requisite for longevity must clearly be the inherent or inborn quality of endurance; of steady, persistent, nutritive force. The second requisite is freedom from exposure to the various casualties, indiscretions and other causes of disease to which illness and early death are so much due."

Of fundamental importance in the prognostic consideration of hypertensive disease are (a) the determination of type of hypertension from the etiologic factor involved, (b) determination of the most vulnerable point, whether the kidneys, heart, or arterial tree, (c) the influence of certain complications (especially in the cardiovascular system).

Determination of Type.

(1) **The Vascular or Arteriolar Sclerotic Type.**—By far the greater number of hypertension cases come under this heading, probably around 85 per cent. Fortunately this type, with the single exception of the climacteric, gives the most favorable prognosis. Vascular hypertension in spite of the fact that its course varies so greatly in certain cases, in regard to the rapidity of onset, height of pressure attained, time of decompensatory cardiac developments, and strength of the vascular tree is, nevertheless, a definitely progressive disease.

Among specific prognostic factors that should be borne in mind in regard to vascular hypertension are (a) the observation that they bear major operations badly, (b) hypertensive young subjects who appear prematurely old offer unfavorable prognosis, (c) a sustained proportionately high diastolic pressure, indicative as it is of grave and permanent organic vascular (arteriolar and capillary) change, and reacting as it does on the cardiac reserve is of bad prognostic omen. On the other hand, a diastolic pressure in which the normal pulse pressure ratio is maintained, *e. g.*, proportional to the systolic, as for instance, 170 systolic with a diastolic two-thirds or less (115 or less) offers a better prognosis, based not only upon the diminished strain on the heart, but also upon the retained elasticity and, therefore, potential relaxation of the arterial tree in response to rational treatment. Of course a low diastolic depending upon a dilated aortic arch or ring, or advanced aortic valve disease with insufficiency, as a cause of low diastolic level, would necessarily have to be ruled out. These will be considered under *Complications*. Another factor to be remembered is that a sudden reduction of blood-pressure in a previously persistent hypertension may lead to anuria, coma, myocardial weakness and death. Let us emphasize that vascular hypertension can be diagnosed only after eliminating other possible (and incidently more definite) etiologic factors such as follow.

(2) **The Renal Type.**—This is caused by a definite, chronic, glomerular nephritis which may have progressed (toward secondary contraction) with incidental retention of nitrogenous waste products. This is the type, more especially so when complicating or superimposed upon a previously existing vascular hypertension, that offers the most unfavorable prognostic outlook. Here we have the natural progressive tendency of hypertension as a vascular lesion in itself, further enhanced by the retention of constrictor substances in the blood. Therefore, the danger of uremia is added to all the inherent tendency of vascular sclerosis to cardiovascular damage.

(3) **Endocrine Type.**—Hypertension of endocrinous origin shows a definite syndrome of a demonstrable endocrinous disorder, especially thyroid, gonad and probably pituitary, a conclusion which is reached

after a careful exclusion of renal disturbance and other conditions, as will be mentioned below, bearing in mind that the possibility of a beginning primary vascular hypertension cannot always be definitely excluded, but must be borne in mind as a possible accompaniment of the endocrine syndrome. The most important endocrine hypertension is, of course, the menopause type, in which the prognosis is rather good and usually yields to several months ovarian substitution treatment. These cases, however, are apt to be followed by some degree of myocardial insufficiency after the pressure has dropped, for the reason that a heart which has accustomed itself to high tension seems to require the stimulation of a circulatory pressure above the normal to maintain its tone. Next in importance is hyperthyroidism, in which systolic hypertension, along with a relatively low diastolic, represents a circulatory response to the call for increased metabolic, and consequently vascular activity. The prognosis in these cases, of course, depends upon the response of the thyroid diseases to whatever treatment is instituted. Certain cases of hypothyroidism with increased tension show a reduction in blood-pressure upon institution of thyroid therapy, probably from absorption of vascular and perivascular myxomatous infiltration.

(4) **Focal or General Infection**—Subacute or chronic intoxication, and metabolic diseases, such as plumbism, syphilis, gout and diabetes, frequently have a very decided effect on arterial tension. As in the endocrine type, the possibility of subsequent vascular damage incidental to the continued presence for some time of hypertension, as a factor in the prognosis, must be considered.

Determination of the Most Vulnerable Point.

The three fundamental factors in the prognosis of vascular and vascular renal hypertension are (1) the condition of the arterial tree, (2) the functional capacity of the kidneys, and (3) the integrity of the myocardium.

1. **The Condition of the Arterial Tree.**—The degree of permanent arterial change is best gauged by what Elsworth Smith terms the "vasomotor response," that is, the reduction in systolic blood-pressure accomplished by treatment. Assuming that hyper-

tension is caused by vasoconstriction of the arterial tree and that this increased peripheral resistance and the continued strain of hypertension produce more and more degenerative arterial changes, *i. e.*, more and more arteriolar sclerosis as the course of the disease progresses, we can readily understand that the earlier we see the case the less will the initial tonic contracture have given place to permanent changes such as fibrosis of the intima and atrophy of the media, and the more favorable response we can expect to obtain as the result of our treatment. Therefore, we can conclude that the degree of blood-pressure reduction obtained is in direct proportion to the benignity of the disease, and hence the favorableness of the prognosis.

Another fact that has appeared to be of considerable prognostic importance during a limited period of observation is that a persistent diastolic reading above 100 offers a less favorable prospect of vasomotor response to treatment than one reading under this figure. This is consistent with the underlying pathologic physiology of the vasoconstriction which, if permanent, interferes with the dilation of the arterial tree in the receipt of the cardiac systolic output, and limits the elastic recoil of the arterial wall in diastole. This disturbance in the vasomotor response of the arterial tree becomes progressively increased as sclerosis and calcareous degeneration follow in the wake of the steady strain on the tense vessel wall of hypertension.

2. **The Functional Capacity of the Kidneys.**—This is of signal importance, for here is the fundamental seat of the disturbance in the renal type, the degree of damage to which determining not only the amount of blood retention products (pressor substances), but the local vascular state to handle the increased amount of blood that must be sent thru the damaged kidney to maintain its essential excretory function as well. Our ability to gauge this function depends upon the following determinations:

- a. The urine examination.
- b. Phthalein functional test.
- c. Amount of nitrogenous retention.
- d. Total chloride output.
- e. Mosenthal test (for testing renal adaptability to excrete water and solids in relation to the intake of liquid and solid food).
- f. Concentration-diuresis tests.

3. **The Integrity of the Myocardium.**—The determination of this factor is of paramount significance, as it is here that the extra load must be carried. The heart must furnish the increased pressure required to maintain the necessarily increased blood flow thru the impaired kidney. Naturally, subjective signs and symptoms of decompensation, or arrhythmia, even with compensation, are unfavorable. Heretofore we have depended to a very large extent upon subjective symptoms, as influenced by exertion, as our measure of myocardial function. While these are of great value in forming our judgment as to how well the circulation is being maintained under the ordinary conditions of daily demands of life, they are all complex functions involving cardiac activity, vaso-motor changes, respiration, etc., and in ratio as they are complex they are difficult of evaluation. Such changes are not well suited as values to compare from period to period in the same individual, and are particularly unsuited for comparison between different individuals because of that unmeasurable factor, varying individual susceptibility to change. What is needed is some measure of value which expresses myocardial efficiency under rest and after exercise as a basis of comparison, and various attempts have been made to provide such tests.

Fortunately we have a fairly satisfactory method for determining cardiac reserve capacity, even with an apparently perfectly compensating heart. I refer to Barringer's method of estimating myocardial reserve by determination of blood-pressure and pulse rate changes after moderately measured exercise.

It has been determined by comparative tests with an ergometer that in stooping from the erect position and back again an adult raises roughly half his weight in foot pounds each time. The minimum number of foot pounds of work necessary for a determination of this cardiac capacity has been determined by Barringer to be about 2,000, and would be expressed by an individual of 150 pounds stooping to the floor and erect again about 26 times within sixty seconds. According to Barringer, a delayed or insufficient rise in the blood-pressure indicates myocardial insufficiency. This rise should be from 15 to 30 points and should occur within two minutes after the exercise stops. If the pressure three to

ten minutes afterwards is lower than it was before beginning the exercise, this amount of work has overtaxed the heart's functional capacity, which should normally be within range of this amount of exercise. We are in the habit of taking the pressure immediately before exercise and immediately afterwards, three, six, ten and twelve minutes later. We expect to find a rise of 15 to 30 points in blood-pressure immediately afterwards, a gradual return to normal, or slightly above normal, at the end of twelve minutes, in a heart with good reserve capacity. Altho the values of the heart's capacity as estimated in these determinations are not absolute, the conception they give us of the heart's reserve function does much to establish a rational and consistent relation between clinical findings and underlying circulatory physiology. The test seems by observation thus far to be entirely consistent with the subjective symptoms in these cases.

The electrocardiogram has thrown some light on cardiac function, but is of relatively little help as an indication of cardiac capacity, according to Christian, altho certain changes such as widening and notching of the Q R S complex and inversion of T waves in certain leads, indicate a seriously damaged heart muscle. None of these tests, however, with the exception of Barringer's, are very satisfactory as measures of circulatory function, and so far as cardiac capacity is concerned, a careful history of symptoms in relation to exercise, a comprehensive physical examination, together with blood-pressure readings, according to Barringer's method, taken together, are our most valuable basis for estimating cardiac efficiency.

The Influence of Certain Complications.

a. Antecedent Pathologic Conditions:

1. *Syphilis.*—The avidity with which the spirochete attacks the cardiovascular system makes it a not infrequent complicating factor in vascular and vascular renal hypertensions.

Luetic coronary disease, of course, quickly undermines the reserve of a myocardium already struggling against the strain of maintaining a high blood-pressure. Syphilitic aortitis involving the aortic arch frequently lends just the impetus needed to make an already overburdened aorta yield to the greatly increased pressure within and

dilate. When the process encroaches upon the aortic leaflets, a mechanical difficulty is added to the heart's effort to maintain circulatory efficiency, and the myocardium must respond with even greater effort. The effect of specific arteritis upon the cerebral vessels needs but passing mention to suggest its influence in predisposing a hypertensive case to apoplexy.

2. *Healed Endocardial Lesions.*—These cases, of course, present a mechanical defect which influences cardiac efficiency in proportion to the degree and type of valvular damage, as well as showing the end-result of what myocardial change may have resulted from an accompanying myocarditis that might have occurred coincidental with the acute endocardial infection.

b. **Contemporary Pathologic Complications:**

Much naturally depends upon the location of lesions; limited arteriosclerosis, as a small plaque at the mouth of a coronary vessel, or a small miliary aneurism of a cerebral vessel, or a circumscribed sclerosis with localized myocardial degeneration and rupture, may cause sudden death, while without these special complications the patient's prognosis is dependent upon the usual factors.

The occurrence of glycosuria in the course of hypertensive disease, in the absence of a diabetic history, is usually indicative of a sclerotic involvement of the pancreas and calls for but mild antidiabetic measures in most cases. However, certain complications of the vascular type of diabetes are prone to occur and should be borne in mind. I refer to such conditions as gangrene (occurs almost exclusively in sclerotic or vascular, diabetes), neuritis, optic atrophy, cataract, etc.

The influence of infections of various sorts, especially influenza and la grippe attacks, pneumonia, pyogenic involvements, etc., depends upon the extent to which these conditions affect the myocardium and the kidneys. These organs, when affected, should become the focus of careful clinical attention for a considerable length of time following the original involvement if a disastrous break in cardiovascular renal efficiency is to be avoided.

Resume.

The prognosis of hypertensive disease depends upon the following factors:

A. **Determination of type.**

1. Vascular.
2. Renal. (May be superimposed upon above.)
3. Endocrine.
4. Other causes such as infective, metabolic, etc.

B. **Determination of the most vulnerable point in the cardiovascular-renal system.**

1. The condition of the arterial tree.
2. The functional capacity of the kidneys.
3. The integrity of the myocardium.

C. **Influence of certain complications.**

1. Antecedent pathologic conditions.
 - a. Cardiovascular syphilis.
 - b. Healed endocardial lesions (of non-luetic type).
2. Contemporary pathologic complications.
 - a. Critical pathologic focalization.
 - b. Glycosuria.
 - c. Infections.

University Club Bldg.

Death of a Famous Dermatologist and Research Worker.—Dr. Iwan Bloch, the dermatologist and sexologist, writes the Berlin correspondent of the *Jour. A. M. A.*, has died at the age of 50. Besides various contributions to dermatology and the etiology of sexual diseases, Bloch has written a number of works on the history of medicine which are valuable for the history of civilization. Worthy of special mention is his "History of Prostitution." Under the pseudonym of Eugen Dühren, he published a monograph on the Marquis de Sade, which is an instructive contribution to the history of sexual perversions and to the history of morals in the eighteenth century and the period of the revolution in France. He took an active part in the founding of the *Berlin Aerztliche Gesellschaft für Sexualwissenschaft*. The London society for research in sexual science made him an honorary member, two years ago, which was the first honor of this nature accorded since the war to a German scientist. He was also a member of the *Gesellschaft für Bibliophilen*, and secured the publication of an unprinted letter of Kant and the posthumous works of Heinrich Lautensack. Several months ago Dr. Bloch contracted a severe influenza infection, which was the beginning of a long illness, during the course of which he had to undergo the amputation of first one leg and then the other.

HIGH BLOOD-PRESSURE IN RELATION TO TONSIL OPERATIONS.

BY

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The relation that the diseased tonsillar condition bears to high blood-pressure has by no means been definitely settled, nor has the question of the definite causative factors in high blood-pressures been definitely determined. But there is little doubt in the minds of the most eminent clinicians that a change in the vessel walls may be begun and continued by some constant irritation from some focal infection. The most probable places for such infections to occur are in the teeth, the tonsils or in the intestinal tract.

We shall assume that the patient with a high blood-pressure has had an infection in the teeth and the intestines eliminated. An investigation of the tonsils is now in order. And such an investigation does not mean a superficial inspection of the tonsillar regions. In order for one to make up his mind that there is an infection in the tonsils he should proceed to make an examination along the following lines:

1. Inspection of the throat.
2. Palpation of the upper cervical glands.
3. Palpation of the tonsillar regions.
4. Cultural examination of the secretion expressed from the tonsil.

1. Inspection of the Throat.—The tongue should be held down firmly with a depressor. If the tonsils are readily seen, one may note the shape of the tonsil, its size and the character of the crypts. If the tonsils are small and buried, they must be made to extrude themselves from between the pillars by forcing the patient to gag. The size of the tonsil is of little importance, for it has frequently been found that the small, buried tonsil which has few open crypts will give rise to more systemic symp-

toms than the tonsil which is easily seen and which has large, open crypts which evacuate themselves with little difficulty.

2. Palpation of the Upper Cervical Glands.—It is the author's practice to examine the upper cervical chain of glands, particularly the so-called tonsillar gland which lies just beneath the angle of the jaw, before examining the throat. One can feel assured that if these glands are palpable and no other cause can be found for their enlargement that it is due to some disease in the tonsils. Such enlargements are more frequently found in children and would not be pertinent to the subject before us if it were not for the fact that subacute tonsillar infections are so often seen in adults, particularly after grippal infections and that the first indication is a swelling of the cervical glands. Repeated infections of this sort may be the forerunner of some change in the walls of the blood-vessels.

3. Palpation of the Tonsillar Regions.—One cannot lay too much stress on the necessity for palpation of the tonsils and the surrounding areas. More information can be gained in this way than in any other. With a tongue depressor holding the tongue down firmly, the ball of the index finger should strip the tonsil from above downward, using pressure on the tonsil at the same time. If the tonsil is small it can thus be extruded from between the pillars of the fauces. If there is an infection present, one will be able to see a serous or pus secretion come from the superior tonsillar fossa. The examination above mentioned may be enhanced by palpating the entire tonsillar region with the index finger of either hand. One thus learns the size and consistency of the tonsil, how firmly it is bound down, its smoothness or irregularity.

4. Cultural Examination of the Secretion Expressed From the Tonsil.—It has been stated that any of the pathogenic organisms may be found in the throat and, therefore, that cultures from the tonsil mean nothing. The author feels that cultures taken from the surface of the tonsils or from the superficial parts of the crypts are valueless. But cultures which are taken from the superior tonsillar fossa, after the tonsil has been massaged in the manner described above, are of a great deal of value. In almost all instances such cultures show one organism from which a definite determination may be made. If such cultures

show the presence of one of the various forms of streptococci, in association with a high blood-pressure, one may feel assured that an infection is present within the tonsil which, in all likelihood, has a great deal to do with the systemic condition. It is always wise to have a vaccine made from the cultures, as one may find it a valuable adjunct to the operation itself.

The author realizes that there are many competent diagnosticians who feel that the tonsillar infection has nothing to do with the increase in blood-pressure. But he cannot help feeling that the elimination of such a focus of infection will materially increase the physical well-being of the patient which means that there is a restoration of tonicity. May not this in itself have a direct bearing on the blood-pressure? Regardless of all facts or theories, a certain number of tonsillectomies are performed in patients who have high blood-pressure. Therefore, two points must seriously be considered: (a) the type of operation to be performed and (b) the effect on the blood-pressure in the succeeding months or years after the operation.

A. The Type of Operation.—In all cases the blood-pressure of the patient should be taken immediately before the operation. A coagulation test of the blood should invariably be made and if the bleeding time (this does not mean the clotting time) is prolonged over eight minutes, no operation should be performed until it gets within normal limits. The patient should be given fifteen grains of calcium lactate three times a day for three days before operation. The question now arises, "should the operation be performed under general or local anesthesia?" One may gain the author's opinion from the statement that he will operate on no patient with high blood-pressure under general anesthesia. Under general anesthesia the bleeding at the time of operation is always more profuse and there is no telling when a diseased vessel will open and give all kinds of trouble. Under local anesthesia all the parts are easily seen. One or two points should be kept in mind. The patient should be given a hypodermic injec-

tion of a quarter grain of morphine an hour before the operation is to be performed, preferably in two cubic centimeters of a 25% chemically pure magnesium sulphate solution. This medicament has a tendency to slow the heart action. The operation should always be performed in a hospital in the semi-recumbent position on an operating table. Only the purest of cocaine should be used, to which should be added the minutest amounts of adrenalin. A clean dissection operation gives the best results. The field of operation should be thoroly inspected before the patient leaves the table and, if there is any generous oozing, the pillars of the fauces may be sutured together. It is seldom that one encounters any post-operative bleeding, particularly if the patient receives the most careful nursing. Objections to the above statement will be made by many an internist and many a laryngologist, but one judges best by his own personal experience.

B. What Is the Effect on the Blood-Pressure From the Removal of the Tonsils?

—This will depend upon the length of time the high pressure has been present and also upon the direct relationship of the high pressure to any tonsillar infection. One should feel that he will get his best results in young patients who are at the onset of their trouble. In almost all these cases there is some form of irritation present and surely it is a far wiser procedure to remove any infection from the tonsils than to subject the patient to the wholesale removal of his teeth.

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Effect of Smoking on Blood-Pressure.

—It may be of interest in these days when the tobacco habit is so universal to mention the effect of smoking on blood-pressure. The immediate influence, claims Henderson (*Glasgow Med. Jour.*, April, 1923), is to raise the systolic from 5 to 25 mm. and to a less extent the diastolic, the pulse-rate also being increased. Shortly thereafter the pressure falls to normal, or even below it. It is generally accepted that in healthy men who are confirmed smokers the pressure is low. With advancing age, and the onset and progression of arteriosclerotic change, the tolerance for tobacco, so far as blood-pressure is concerned, becomes less.

THE RELATIONSHIP OF HIGH BLOOD-PRESSURE TO OTHER IMPAIRMENTS.

BY

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There are three important scientific groups interested in the subject of high blood-pressure. First, the medical life insurance group, upon whom rests the responsibility of classifying such cases as to their acceptability for insurance; second, the clinical group, for whom blood-pressure is usually an emergency problem in the treatment of disease; third, the life extension and preventive medicine group, seeking to ascertain the original causative factors in high blood-pressure and the means by which it may be prevented from developing or held in check by adjustments in personal hygiene. It is extremely desirable that these groups come closer together in the study of these problems and in an interchange of views.

The life insurance expert views these cases in the mass. He is interested in the mortality rates exhibited by large groups of individuals showing varying degrees of increased blood-pressure. Noting as he does the high mortality that obtains in the mass among those showing markedly increased systolic blood-pressure,¹ he views this condition with more concern than the average clinician, who is not disposed to take much interest in systolic pressures that do not run beyond 160 or 170 millimeters, especially in the middle aged groups. The clinician, dealing with individuals and noting how frequently they maintain apparently good working capacity with pressures even beyond 200, is justified in reassuring his patients and not showing undue alarm about

these fairly advanced systolic readings. But he is not justified in ignoring the mortality records on such cases as a class and would be wise to take more interest in investigating the life adjustments of such types and more thoroly searching for some original focus of trouble. There is danger in the term "essential hypertension." It is too reminiscent of "idiopathic peritonitis." There is hazard in employing a term in which one may take refuge for an apparent explanation of something that is not being explained and the cause for which has not been sought with sufficient persistence and thoroughness. On the other hand, the life insurance expert, having statistical justification for the acceptance at current rates of premium of risks who show moderately advanced blood-pressure, may not take sufficient interest in these cases of early hypertension. This is a possible influence from life insurance practice that it is well to keep in mind; that is, a too prevalent idea that a man having been accepted for life insurance is entitled to a clean bill of health, is practically a perfect man and has nothing to worry about or any reason to further search his body or his life for conditions that may menace his health. It is too often forgotten that acceptance for life insurance merely indicates that the type of individual accepted belongs to a class that comes sufficiently within the mortality assumed by the company's tables to warrant his acceptance. There are no perfect individuals, and even super-standard risks when examined from the life extension viewpoint will be found to have certain defects or present errors in living, the correction of which would materially improve their life expectation.

The life extension view of high blood-pressure is not an alarmist view, but one of sound scientific caution. The fundamental principle of this modern attitude toward

health problems is that of dissatisfaction with average conditions, and a belief that the condition of health of the average individual is deplorable when measured by reasonable standards of human excellence and living capacity.

The average clinical attitude toward such problems is well illustrated in a recent incident. An individual who had had the life extension examination had been counseled with regard to the menace of defective tonsils. Later he reported that he had submitted this matter to one of the leading physicians in New England and had been informed that his tonsils were no worse than those of fifty per cent. of the people of Boston. We replied that if he and his physician were satisfied with the general physical condition of fifty per cent. of the people of Boston, no further action was needed; but if he had aspirations to attain a superior condition of health and avoid future trouble and premature ageing, it might be well from the preventive standpoint to again consider the condition of the tonsils.

A certain clinical formula is employed for classifying cases of high blood-pressure which reflects this easy-going attitude toward the problem on the part of the clinician; that is, to add one hundred to the age of the individual and take that as the limit of normal systolic pressure. This standard is far away from the life insurance standard at the older ages, showing that among average life insurance risks the range of systolic pressure is between 120 mm. and 135 mm. A pressure of 160 mm. at age 60 cannot be regarded as within the normal range, altho it may not be at all threatening and possibly the individual is fairly well adjusted to it. The alert physician, however, when confronted by such a symptom, will search carefully for any

causative or complicating factor and will not allow a formula derived from no justifiable basis of experience to influence him.

The life insurance standards which are elsewhere presented have been determined by the analysis of many thousands of cases and have been checked by extensive investigations in independent centers. In our own work we have allowed a variation of 20 millimeters above and 15 millimeters below the averages shown in the life insurance tables, but always carefully scrutinizing the cases at the higher or lower norms for any pathologic conditions or errors in living habits. It is important for the clinician, when confronted by a man of 40 whose blood-pressure runs persistently between 140 and 150, to consider what that man may show in five, ten, or fifteen years, if nothing is done for him by medical science to improve his physical state or guide his method of living. I have frequently noted cases where individuals examined for successive years and neglecting medical and hygienic counsel have shown a step-ladder rise from 145 to 175 in several years.

Very puzzling cases arise which have been classified as cases of "essential hypertension." Individuals who maintain an astonishingly high systolic pressure over long periods of years without any great impairment of general health or limitation of their activity, are fairly numerous. It is not uncommon in our experience to find people who come for examination, very confident in their vigor and youthfulness, with a systolic pressure of more than 200 millimeters, wholly unaware of their condition. Of course many of these cases are frankly pathologic when carefully analyzed.

Occasionally people taking these examinations report that their physicians "do not believe in blood-pressure." By this crude expression I suppose they mean that the

physician does not look upon increased blood-pressure as a necessary indication of arteriosclerosis or advanced disease, and that apparently vigorous people show fairly wide variations in blood-pressure. Of course the only justifiable scientific attitude of mind is that of regarding blood-pressure as a symptom. It is certainly not a disease. There must always be some physical defect or physical influence at work, even in cases where there is a pronounced psychic element. Everybody who is worried or overworked or excited does not show increased blood-pressure, and we must usually suspect some sensitizing agent other than the psychic factor when we are confronted by these types. It does not altogether answer the question to say that it is a vasomotor phenomenon.

There are certain causes for high blood-pressure that are well known and universally accepted, such as advanced kidney impairment and cardiac involvement, and the correction of these types of high blood-pressure is a problem in the prevention of heart disease and kidney trouble. A common popular and all too prevalent clinical fallacy is the assumption that arterial thickening is necessarily associated with high blood-pressure. This is not borne out by good clinical observation, is theoretically unsound, and finds no support in statistics available from life extension examinations. Arterial thickening is present in higher ratio among high blood-pressure cases, but there is no necessary relationship between these conditions, as Allbutt² and others long ago pointed out.

Assuredly the diastolic pressure and pulse pressure must be considered the all-important matters in intensive clinical consideration of these cases. It is important, however, to consider high systolic pres-

sure cases as a class, and to ascertain the related impairments and influential living habits that are presented by this group. We may then be able to discern certain outstanding factors that will point the way to practical preventive work, either by medical means or the government of the life and activities of the individual.

Thru the courtesy of Dr. Augustus S. Knight, Medical Director, and Dr. Louis I. Dublin, Statistician, of the Metropolitan Life Insurance Company, I am able to present a study of 17,000 life insurance policy-holders who had periodic health examinations in 1921 thru the Life Extension Institute as a privilege extended by that company. This group has been divided into sub-groups and very critically analyzed with regard to the existing related impairments in each group. I can give only preliminary figures at present with regard to the high blood-pressure group, but these figures are not likely to be materially changed by further analysis. They relate to 13,308 cases of normal systolic blood-pressure, that is, cases with blood-pressures not departing either way from the limits above mentioned, namely, 20 millimeters above or 15 millimeters below the life insurance standard for the given age. In comparison with these there is an analysis of 1,021 cases showing blood-pressures ranging from 20 to 40 millimeters above the average for the age. The standards used for the various ages were as follows:

AVERAGE SYSTOLIC PRESSURE.

Ages	Millimeters
15 to 20.....	120
21 to 25.....	123
26 to 30.....	124
31 to 35.....	124
36 to 40.....	127
41 to 45.....	129
46 to 50.....	131
51 to 55.....	132
56 to 60.....	135

A study of these comparative figures shows some interesting and, in some respects, startling results. In the first place, cases classified as following a high protein diet are present in practically the same ratio in each group. For the purposes of this classification, a high protein diet is one

tension Institute cases classified as high protein feeders who likewise show no excess ratio of high blood-pressure in the group.

This testimony is in line with that presented by Mosenthal³ in a clinical study of high blood-pressure cases wherein it was shown that apparently a high protein ration

A STUDY OF 1,021 CASES OF HIGH BLOOD-PRESSURE AND RELATED IMPAIRMENTS AND LIVING HABITS
COMPARED WITH 13,335 CASES OF NORMAL BLOOD-PRESSURE.

Physical defects and influential living habits.

	Normal blood-pressure 13,308 white males (20 mm. above to 15 mm. below the stand- ard).	High blood-pressure 1,021 white males (20 to 40 mm. above standard for age).	High blood-pressure cases as compared to normal (+ or -).
	Per cent. all ages.	Per cent. all ages.	Difference. Ratio.
High protein diet	38.4	38.5	0
Excess of tea and coffee	40.8	44.3	+ 3.8 + 9%
Alcohol, moderate	6.9	8.8	+ 1.9 + 30
Alcohol, excess .....	.6	1.1	+ .5 + 83
Tobacco, temperate	12.1	13.8	+ 1.7 + 12
Tobacco, excess	33.1	31.	- 2.1 - 6
Functional heart signs	5.6	9.6	+ .4 + 70
Valvular defects .....	.8	2.4	+ 1.6 + 200
Hypertrophy	2.2	7.8	+ 5.6 + 250
Myocardial changes .....	.1	1.0	+ .9 + 900
Rapid pulse (90 and over)	7.7	18.7	+ .12 + 156
Arterial changes	17.8	35.2	+ 17.4 + 100
Tonsils, defective	26.5	26.9	0
Caries of teeth	8.1	9.7	+ 1.6 + 20
Recession and pyorrhea	14.4	19.4	+ 5. + 40
Heavy dentistry, X-ray advised	41.4	42.7	+ 1.3 + 3
Insufficient dentistry	5.4	7.2	+ 1.8 + 33
Gastric acid stomach, etc.	17.8	17.9	0
Constipation	39.2	38.4	- .8 - 0.2
Albuminuria	14.7	18.1	+ 3.4 + 23
Casts	3.9	6.6	+ 2.7 + 70
Pyurin (marked or persistent)	2.7	3.5	+ .8 + 30
Glycosuria	3.8	5.0	+ 1.2 + 31
Overweight, 10 to 15 per cent.	9.3	11.	+ 1.7 + 18
Overweight, 15 to 20 per cent.	7.5	9.5	+ 2.0 + 26
Overweight, over 20 per cent.	12.6	25.5	+ 9.9 + 78

in which meat or other concentrated protein food is taken in liberal quantities two or more times daily. So far as this testimony is concerned, a high protein diet does not seem to be a factor in inducing high blood-pressure. We have a check upon these figures from an analysis of 6,295 Life Ex-

had no influence on the blood-pressure curve; neither had a low protein ration any influence in lowering it. This is contrary to widely accepted clinical and hygienic views and is a matter that is well worthy of further study. Strouse and Kelman⁴ at the Michael Reese Hospital confirmed the ob-

servation of Mosenthal as to failure of high protein feeding up to 150 grams daily to have any apparent influence on high blood-pressure.

As against this evidence we have the observations of Squier and Newburgh⁵ that high protein feeding can directly produce nephritis, altho it had no effect on blood-pressure; and a recent paper by Newburgh and Clarkson⁶ reporting the development of atherosclerosis in rabbits by high protein diets.

Benedict's⁷ experiments with a squad of Y. M. C. A. workers who were placed on a very low protein diet and also a low calorie diet, plainly show the power of such a diet to lower the blood-pressure of normal subjects far below the average, without apparently impairing the health of the individual, but merely placing him on a lower plane of metabolism. Mosenthal has suggested that these people were in a sense actually temporarily ill and that this accounted for the low blood-pressure; but my own observation of the individuals in this squad would not bear out this view. These men showed pulse rates of 30 and systolic pressure below 90, but, nevertheless, appeared to be in sound health, one of them being able to run and win a relay race with normal, vigorous subjects. The slight secondary anemia and diminished sex expression in these subjects appeared to be physiologic adjustments rather than pathologic phenomena and while Benedict⁷ cited these facts as warrant for caution in applying such a low general diet, he was quite positive as to the thesis of a physiologic adjustment to a low protein ration.

In the group of 17,000 policyholders, a sub-group of low blood-pressures (15 to 25 millimeters below the insurance standard for the age) were analyzed and the high protein feeders found to be 28 per cent. less

in number than in the normal blood-pressure group.

These figures do not justify an abandonment of the clinical custom of reducing the protein intake in high blood-pressure cases. It has long since been shown beyond any reasonable doubt that 75 grams of protein a day are sufficient for a man of average weight—in fact, affords a liberal factor of safety. There could be no conceivable advantage in increasing such a ration. A reckless use of protein in high blood-pressure cases is no more justifiable than a reckless reduction of the protein ration. It is always best to err on the side of sufficient protein than to risk an insufficiency.

Mosenthal and others supporting his view, allege that it is a fairly common custom in high blood-pressure cases to cut down the protein and increase the starches, thus producing overweight. It is to be hoped that this is not actually a frequent practice as it is the one thing most likely to injure the patient. Mosenthal speaks of "amateur doctors" who follow this custom, but my observation has been that there are altogether too many clinicians who are not sufficiently alive to the menace of overweight, as will be later shown in this paper. It is a very common experience for life extension subjects to return with the message that their physicians were not interested in their overweight and saw no occasion for diet restriction.

As suggested, these figures do not justify abandonment of the clinical custom of reducing the protein intake in cases of high blood-pressure, but they warrant caution in relying too much on such a measure and suggest the importance of considering the other factors shown by this table as being predominant characteristics in high blood-pressure groups.

Presenting these figures for what they

may be worth, we now turn to another mooted question—that of tobacco. A very considerable number of these people used tobacco, 45 per cent. Those classified as temperate users of tobacco (less than 4 cigars or 9 cigarettes or 9 pipefuls daily) were present in slight excess in the high blood-pressure group; but those classified as using tobacco to excess were present in lower ratio. Here again a check is available thru the analysis of some 5,520 cases of excessive tobacco users in the life extension group, among whom there was found no excess ratio of high blood-pressure cases, altho other important impairments were found, such as increased ratio of arterial thickening, mouth infection, and those showing rapid pulse. From these figures it is not possible to say that tobacco is an outstanding factor in the causation of high blood-pressure, altho it undoubtedly is a factor in individual cases. There will be noted what we would consistently expect to find, a higher proportion of cardiac defects, albuminurias, glycosurias, etc.—conditions which may be either a cause or a result of increased blood-pressure. The need for the prevention and treatment of such conditions is obvious, and these groups must be studied separately as to the predominant associated defects.

Constipation, strongly suspected of being a factor in the causation of high blood-pressure, does not loom up in this group. It is present in about the same ratio in the group of normal blood-pressures.

There are other conditions in this high blood-pressure group which may be suspected of being largely causative agents, rather than sequelæ of the condition, notably mouth infection. This is present in a distinctly higher ratio and is undoubtedly a factor to be reckoned with in protecting the individual from circulatory damage. Ex-

cess of tea, coffee and alcohol also presents definitely higher ratio in this group.

Greatly exceeding any of these factors in importance, we note the condition of overweight, suggesting both overeating and lack of exercise; at least overeating when considered in relation to the requirements of the individual. These figures are more in line with popular notions. The view is pretty generally held that overeating is an important factor in causing these degenerative affections. These figures would give ample support to such view. They have been checked up by reference to the overweight sub-group, an overweight group numbering 2,145, in which high blood-pressure is an outstanding impairment (14.9 per cent. as compared to 6 per cent. in the normal weight group).

I have noted in discussing these matters with various clinical authorities that there is a tendency to minimize the importance of high blood-pressure among overweights—that is, the condition is regarded by some as more or less the natural accompaniment of overweight—a mechanical factor. However, inasmuch as overweights show a very high mortality, especially from degenerative maladies, we must take this symptom in overweights quite seriously, and we are fully justified in counting on a favorable response to regulation of the diet and exercise for a conservative and gradual reduction of the weight. In our experience the most emphatic results in the reduction of blood-pressure have been attained thru such means. The most hopeful cases of high blood-pressure are those where overweight appears to be the chief impairment, and it is not at all uncommon to note a fall in the blood-pressure, millimeter for pound, as the weight comes down; and this without any weakening effect on the individual or impairment of the circulation. There can be

no question as to the extra burden carried by the circulation of an individual who is 25 to 50 pounds overweight. If unfavorable results follow reduction methods, it is frequently the case that some extreme rigorous system has been adopted; that exercise has not been gradually increased as the weight comes down, or that there has been neglect of abdominal laxity mechanically produced by the loss of a "bay window." Also depression may be caused by a too reckless level reduction of the diet involving a protein deficiency. With a low calorie diet there will, as Benedict showed, be a heavy nitrogen loss, and no chance should be taken with extremely low protein rations.

These examinations were made by general practitioners scattered thruout the country, but carefully instructed as to blood-pressure standards, the proper instruments to use, and the necessary precautions to secure accurate readings. They represent for the most part initial findings, not cases followed up and finally classified as persistent high blood-pressure types. It is hoped later to present a much more intensive study of these groups, and then additional light may be thrown upon the questions raised. For example, a mortality study would be helpful, altho in the absence of an excess of pathologic conditions found on examination, an excess mortality from high blood-pressure states in the high protein group is not to be expected.

A check on these figures was attempted by the analysis of 1,000 recent consecutive cases examined at the Head Office of the Institute in a more intensive way, both as to the physical examination and the personal history and diet record. The high blood-pressure subjects in this group showed 16 per cent. of high protein feeders as compared with 29 per cent. in the normal blood-pressure group. Excessive tobacco users

were present to the extent of 30 per cent. in the high blood-pressure group as compared with 37 per cent. in the normal blood-pressure group.

The ratio of high blood-pressure cases (more than 20 millimeters above the standard) in this total group of 17,000 people is interesting, because they may be regarded as a fairly representative group. This ratio, 7.2 per cent., is far lower than that in a group of 5,000 examined at the Head Office of the Institute, where among men the ratio was 16 per cent. and among women 17 per cent. This latter group is perhaps intermediate between an ordinary clinical group and a representative population group. In industrial and commercial life, where the examinations are conducted on average people supposedly healthy and at work, high blood-pressure was present in 3 per cent., but the average age was lower—about 30 as compared to 37 in the life insurance group. An intensive study of this group showed that among high blood-pressure cases overweight was the predominant physical characteristic, being present among 50 per cent. of this group as against 18 per cent. of the general group. The predominant characteristic among low blood-pressure cases was underweight, being present in 70 per cent. of the cases in this group as against 42 per cent. in the general group.

There is no doubt that this condition of high systolic pressure is one meriting careful attention of both clinicians and hygienists. It is perhaps not as widespread as some people suppose and there is no doubt that astonishingly wide fluctuations of blood-pressure occur fairly frequently among people who show little pathology. It is very unwise to overemphasize the significance of the condition or to regard it as a disease. It is certainly a hazardous procedure to treat the blood-pressure rather

than the patient. It is a symptom, but usually a warning symptom. It justifies careful search of the body and the life of the individual for some sensitizing or irritating factor or complicating pathologic condition; and people whose blood-pressure varies widely on slight provocation may well consider their methods of living and guard themselves as much as possible against psychic strain, as well as take the elementary precaution of having their bodies critically examined periodically.

Assuming that all poisons and infections and complicating factors have been sought for and dealt with, we may say that the best protection against sudden death in these high blood-pressure cases is moderation in diet, adequate rest, and avoidance of emotional strain. The influence of emotional factors in increasing blood-pressure has been singularly well depicted by Neuhof,³ whose observations are well supported by the observations of our office, especially among women. Unfortunately, we have no emotional reserve test of the circulation. Exercise and static tests do not enable us to predict with certainty what the reaction of a given circulation will be to a fiery board meeting or a prolonged state of anger, fear or worry. It has been my observation that a circulation that will stand up well under exercise and physical strain will often go to pieces under very moderate emotional strain. This does not prove that emotion is the original cause of the circulatory deficiency and it cannot be said too often that we must not rest content with psychic regulation, but persistently search for infections, poisons and other physical causes, particularly those affecting the endocrine system.

The figures herein presented illustrate one of the most important by-products of life extension work. As this work extends and various agencies, such as the Army, the

life insurance companies and large industrial concerns take it up, and records are accumulated showing actual conditions in the population, it will be possible to answer many questions that could perhaps never be fully answered thru clinical observation alone. These examinations bring out an entirely different form of data than that supplied thru hospital studies or clinical reports. They have, therefore, two-fold value: they may assist the clinician in the interpretation of the conditions that immediately concern him, while, on the other hand, they point the need more definitely to practical lines of prevention. They show the extent of human needs and, therefore, the vast opportunity for human betterment that lies within the power of science, even as it exists today. There are now available studies in twelve sub-groups, such as have been presented in this paper, and with the cooperation of Dr. Knight and Dr. Dublin, we hope soon to submit them for scientific consideration and discussion.

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CHRONIC ARTERIAL HYPERTENSION.

BY

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We are emerging from the mass of literature on arterial hypertension to a more rational view of the conditions under which it occurs. It is readily to be seen that those of the widest experience rely less upon absolute values, as registered by blood-pressure instruments, tho we are still in that stage of knowledge of hypertension which brings forth reports of cure, or at least remarkable reduction by this or that method of treatment which, however, fail in the hands of other clinicians. The study of hypertension is apparently no more free from these enthusiasms than is pneumonia, or was typhoid fever.

Scientific medical observation is leading us on to more sure and safer grounds, for which we are greatly indebted to such men as the younger Janeway, Rolleston, Allbutt, Hewlett, Mosenthal, as well as the pathologists who have studied the concomitant condition in the kidney, heart and arterial wall.

The history of instrumental blood-pressure observation is so recent that no re-

capitulation is needed. It may be conducive to an understanding of our present knowledge to restate the known factors in the mechanism of blood-pressure variations which are admitted at the present time. The output of blood by the heart is one of these factors depending upon the force of the heart, its frequency and the volume of blood acted upon by the cardiac systole. Of equal or greater importance is the tone of the artery; in other words, the resistance to the onward flow of the blood thru the artery, dependent again, to some extent, upon the amount of blood delivered to the ventricle from the veins and the auricles, the valvular competency and the strength of the ventricular contraction, as well as the heart rate. Both physical and pathological states may and do cause contraction of the arterioles to such a degree that, as Tigestedt states, "A vessel may almost lose its lumen entirely if the vasomotor nerves are sufficiently stimulated."

The present view is that, while the volume output from the heart is partly responsible for the height of the blood tension in the artery, the greatest and most variable factor is the degree of contraction of the vessels, so that there is hardly any limit to the increase of arterial resistance from this cause. This results, at times, in a high blood-pressure when there is a very small output from the heart with a marked arterial resistance.

Hewlett states that only in the brain, of all-vascular areas, does the normal blood supply depend more on the height of the general blood-pressure than upon local vascular control. Elsewhere in the body the circulation to the local vascular areas is under local, automatic nervous control to a greater extent. If the arterioles supplying a small organ or area are constricted or

relaxed no great change in the general blood-pressure results. On the other hand, if the splanchnic or other large area be changed as to its vascular resistance, a measurable or even a striking change may result in the systemic blood tension.

The size of the arterioles is governed mainly by nervous control, which is exerted thru vasoconstrictor and vasodilator impulses. The vasoconstrictor center in the medulla may be stimulated by changes in the blood or by nervous impulses from other parts of the body, and acts mainly by constricting the large splanchnic vessels. The vasodilator impulses arise mainly from the first part of the aorta and are carried to the medulla by the depressor nerve, and they are excited by either nervous or chemical causes. The depressor nerve is stimulated when blood-pressure increases so that this reflex tends to prevent sudden changes of arterial pressure. (Hewlett.) It is probable that the capillaries also vary in size under chemical or nervous influences, but just how is very little understood. The veins also must have some influence in the control of blood supply to the heart, and this varies with many physical conditions, as heat, cold, exercise and nervous conditions.

Temporary rises in the blood-pressure are encountered in many states in which the cause is obvious. That which occurs after muscular exertion is probably due to increased heart action. Hewlett states that most transient increases in pressure are due to contraction of the arterioles as, for example, in acute asphyxia the vasomotor-center being stimulated by the venous character of the blood. Acute cerebral compression causes a rise in blood-pressure thru an anemia of the vasomotor center; if prolonged, the irritability of the center is reduced so that the pressure falls again. The

gefasskrise of Pal may also be accompanied by a blood-pressure rise, tho it is uncertain whether it is due, in these instances, to the vascular spasm or to irritation of the vasomotor center.

Certain forms of acute nephritis seem to be prone to cause heightened blood-pressure, especially the glomerular types, as opposed to those in which the tubular damage predominates. Uremia, eclampsia and anuria are generally accompanied by a raised arterial tension which subsides with recovery from the attack.

The stress of modern conditions of living undoubtedly has increased the incidence of chronic arterial hypertension. It must be acknowledged that we do not know in the majority of instances just how this is caused. As middle age advances the changes that take place in the arteries naturally favor a rise in the blood-pressure by increasing the peripheral resistance in the arterial tree; loss of elasticity of the arteriolar walls deprives the capillaries of the continuous blood supply during the cardiac diastole; as increase in the muscular tissue in the wall of the arterioles tends to increased vasoconstrictor action, and the capillaries themselves lessen in area. All these natural changes unite to produce a physiologic rise. It has been abundantly proved that atheroma and sclerosis of the larger arteries do not cause hypertension unless accompanied by arteriolar fibrotic change. It is now conceived by clinicians, however, that it is not because the changes in the arterial walls or the capillaries decrease the area of the blood stream to such a point as to produce permanent hypertension, but that the thickened arteriole is much more subject to vasomotor contraction than the normal vessel, and the result is increased resistance to the onward flow of the blood,

due to an increased tone of the muscle fibers surrounding the arterioles. In some cases of chronic arterial hypertension no changes can be found in the arteriolar walls, nor in the kidneys. It has been assumed that the high blood-pressure in these instances is due to an increased functional tone in the arterioles generally. This has led to the view now common among pathologists, as well as clinicians, that functional hypertension itself is a cause of sclerotic changes in the vessels, or that both the hypertension and the arteriosclerosis are due to a common cause.

Müller of Munich argues that arterial hypertension must be explained as a functional affair for, otherwise, it would be less variable than it is. He states that pathologic thickening in very extensive vascular areas is necessary before the tension in the arteries is measurably increased. Müller has noticed the "coincidence" of adenoma of the thyroid and hypertension, also the same condition with hypernephroma and tumors of the suprarenal bodies, as well as diseases of the hypophysis and adjacent tissues.

Rolleston strikes a sympathetic cord when he speaks of the great prophylactic value in discoveries of high blood-pressure in its early stage, before the onset of secondary and structural changes have taken place. He advises that people of forty years of age go as regularly to have their vascular systems examined as they go to a dentist, that progressive changes may be noted and unfavorable tendencies counteracted by a change in the manner of living. This is a point in practice which deserves the greatest emphasis. Arterial hypertension in itself is a possible or even probable source of later pathologic and irremediable changes. It is at least theoretically possible to prevent progressive cardiac hypertrophy or forms

of sclerosis in the circulation which will shorten life when compensation breaks. One must keep in mind that arterial accidents may happen when the general blood-pressure is not materially raised above the normal. It is a frequent observation that small patches of arterial sclerosis may occur in the cerebral or other vessels under this condition and lead to serious circulatory insult. Rolleston quotes G. W. Norris' statement that less than 15 per cent. of the patients with blood-pressure of 200 mm. or above die from cardiac failure or apoplexy and that cerebral hemorrhage may occur in patients with blood-pressure never above 170 mm. Shortness of breath in one having hypertension is a sign of advancement. Slight strokes give a bad prognosis, as probably indicating minute hemorrhages or local degeneration.

The differentiation between benign sclerosis of the kidney with hypertension, and hypertension without renal change has been investigated by Kylin, who believes that the reaction to the subcutaneous injection of adrenalin is different in the two instances to an extent which is useful in diagnosis.

O'Hare concludes that most of the drug treatment to reduce blood-pressure is useless, inasmuch as rest alone results commonly in reductions as great as 40 mm., whereas, by drug treatment of various sorts, a reduction of 10 mm. is considered significant.

Grober makes the statement that high altitudes are beneficial in hypertension cases. Unfortunately, data in support of this statement are not adduced.

In reading the literature on high blood-pressures, in connection with observations of one's own, it is forcibly borne in upon the observer that the one great desire to find remedies for the condition have lead to rather

broad generalizations. The causes of blood-pressure variation are probably as various as are the nervous constitutions of patients, together with their environments and the intrinsic toxemias from which they may suffer. The classification and grouping, therefore, of chronic hypertension at the present time is very unsatisfactory outside of those which are connected with certain forms of nephritis. Classifications are not useless inasmuch as they lead us to see clearly some of the commoner causes of high blood-pressure, but it is to be observed that not all high blood-pressure can be so assigned to a group by merely the manifestation of a combination of factors.

It is one of our common experiences that chronic nephritis may be associated with high blood-pressure. It is a diagnostic feature of the chronic interstitial variety, while in glomerular nephritis it may be absent. There is rarely any increase in blood-pressure with amyloid disease of the kidney.

Pathologists are continually finding normal kidneys in patients with a high degree of hypertension.

Many observers note that clinical arteriosclerosis is often accompanied by normal or lowered blood-pressure. Even cardiac hypertrophy does not exist in 35 per cent. of all subjects with marked arteriosclerosis, according to Ophüls. It is evident from a consideration of the above factors that high blood-pressure cannot be ascribed in every case to pathologic changes, even in the presence of sclerosed arteries or diseased kidneys. We are in doubt as to whether the lesion in the artery or kidney causes the hypertension, or whether the hypertension existed first and led to the changes in the renal tissue or arterial wall. The question bids fair to rival the celebrated conundrum of "Which was the first, the hen or the

egg?" The real importance of the hypertensive states is found in the results of high blood-pressure upon the heart, kidneys and the arteries, which must bear the brunt of the ever-increasing strain. Continued progressive arterial hypertension causes almost invariably an hypertrophy of the heart, which for the time at least compensates for the increased obstruction of the blood flow. There is a tendency for the heart to weaken under this strain alone, and it must not be forgotten also that the arteries which supply the heart muscle itself are subject to the same changes which take place elsewhere, and that a nutritional disturbance of the myocardium follows. These are evidenced in different patients in different ways. Cardiac irregularity is a somewhat frequent occurrence, either producing extra-systoles or pulsus alternans. Anginoid pains are much more common in hypertension cases than in others. Whether the pains are due to myocardial or coronary disease or to vascular spasms must remain unsettled for the time.

When the arterioles of the kidneys are affected, chronic interstitial nephritis comes on, and some of these patients die of renal insufficiency, perhaps ending in a terminal uremia.

The brain symptoms form an interesting group. Thickening of the vessels is apt to cause some symptoms of mental deterioration, loss of memory, or even transient loss of motor power, aside from the more sudden insults due to hemorrhages or thrombosis. Of late the more temporary of these attacks are recognized as probably due to vascular spasm.

It is thus seen that a patient suffering from chronic progressive hypertension has, in general, a rather unfavorable outlook. The tendency is altogether toward either a

progressive heart failure of one sort or another, a cerebral accident or kidney disease of unfavorable prognosis. We have been a little too apt to regard high blood-pressure as a conservative and compensatory process at times. It is easy to compare a one-story bungalow, requiring only a low head of water, with a twelve-story building, which needs far greater pressure to supply its needs. In the one case the plumbing may be even of elastic material; in the other, it must be very much stronger and require great force to supply demands at the top. It is obvious that in the latter case accidents are much more common and serious and, if additional stories are added to the building, the attempt to supply water at the top will reach its limit. The comparison falls short in that the tissues of the human body require its supply to be varied constantly according to the needs of activity.

It needs no argument, therefore, that chronic progressive hypertension is a serious affair and that its ultimate results should be prevented as far as possible. Theodore Janeway collected statistics on the causes of death in this condition and found that, as quoted by Mosenthal, 35 per cent. died of cardiac insufficiency, 7.3 per cent. of angina pectoris, 4.4 per cent. of edema of the lungs—a total of 46.7 per cent. of deaths attributable to heart failure; 22.6 per cent. died of uremia and only 14.6 per cent. of cerebral conditions.

It is traditional to attribute arterial hypertension to faulty habits, the chronic toxemias, such as coffee, tea and tobacco, and others of the class of things to which the text-books have long given a bad name. In considering one's actual experience we probably all agree that worry, family or business responsibility and overeating, with insufficient or irregular muscular exercise, form a

combination which has been present in a strikingly large proportion of our cases of high blood-pressure. A family history of cardiac, renal or vascular disease is also quite noticeable.

It has been the writer's lot to meet with a large proportion of instances of hypertension in which the progressive heart symptoms predominated. In one case, for example, a man of large responsibility in business and apparently in perfect health, was observed to have a progressive but gradual increase in his systolic pressure. He was warned of his danger, but found the advice given him too drastic and he was not seen again until nine years later, when he died of progressive myocardial failure. Another man died of thrombus in the lower branch of the left coronary seven years after he had been urged to heed the warning given by a raised systolic reading, followed later by some transient shortness of breath on exertion. Both these men were good examples of the results of neglect to reduce the load on the heart. Many others will readily come to mind.

Hypertension varies markedly with rest and reduction of the load, the systolic reading varying in the given patient 20 to 30 and even 40 mm. of mercury. The diastolic pressure varies less, but it is not fixed. On taking up activity the former pressure is usually resumed.

In the treatment of raised blood-pressure two things should be attempted: Reduction of the burden already thrown upon the heart and arteries and elimination of those causes which keep up or increase vascular tension. The vasodilator group of drugs has fallen into deserved disrepute because they are actually of little effect; and furthermore, artificial reduction of an existing pressure

by such means frequently results in unfavorable states of vitality.

Overweight is a disadvantage to the burdened circulatory mechanism. A diet high in carbohydrates may be deleterious in these instances. As a matter of fact, with a combination of high blood-pressure and obesity a reduction of weight often relieves the hypertension remarkably. The same argument applies to fats, tho they have no selective effect upon the heart, arteries or kidneys. Various observers have experimented with salt in the diet in hypertension. Some of these, apparently, have found that increase or diminution of sodium chloride causes a rise or fall in the blood-pressure. Other observers deny this. The truth probably is that it is only in hypertension with nephritis that sodium chloride intake has an effect on the height of the blood-pressure. We know that the elimination of salt is interfered with in most cases of nephritis.

It is probably unnecessary to restrict the fluid intake in an effort to reduce blood-pressure. It is true that very large amounts of fluid do result in an increase in arterial tension, as observed in Miller and Williams, but Mosenthal found that this rise requires an ingestion of many times the probable amount of liquid which the individual would be likely to take. Intravenous administration of solutions, even up to 1,000 c. c., does not affect the blood-pressure.

As to the effect of rest and relaxation from nervous influences: In our own experience and that of others of wide clinical view, the most satisfactory results in treating hypertension have been attained by rest for a longer or shorter period, together with the removal of all possible sources of irritation and worry. This involves, of course, the consideration of business and social conditions not always amenable to change.

How much actual reduction in arterial tension may take place in a given case is problematical. Some individuals are able to throw off care; others are not. We often observe remarkable increase in blood-pressure under conditions of acute grief or anxiety with a return to or near normal later on. Worry becomes a habit, and one very difficult to break. On this account a prediction cannot be made how far rest will benefit such cases. Rest does good, especially rest in a recumbent position. From a theoretical point of view the progress of pathologic changes will be best retarded by this means. It becomes absolutely necessary in the presence of acute symptoms due to hypertension.

Summary.

It is evident that chronic arterial hypertension as a sign is serious and is on the increase. If unmodified, it tends slowly and insidiously but progressively toward pathologic changes in the arteries, kidneys and heart; and the result of these changes is progressive heart failure in one of its forms in nearly 50 per cent. of all long-continued hypertension cases. Of the other 50 per cent. more than half are apt to have either serious renal disease or cerebral accident. The others die of intercurrent affections. No specific treatment can be expected to restore the individual completely. Reduction of nervous strain and rest are the most important means of combating the condition and arresting the progress of change in the tissues which results from hypertension. Along with these things attention to the diet and the correction of such faults as foci of infection have a bearing on its progress and often result in a marked reduction in the blood-pressure.

As experience accumulates we will find that we rely less and less upon the absolute

height of arterial tension, even as related to age periods. The continuous, progressive, tho slight, changes are more important. The longer an increased blood-pressure is allowed to continue, the harder it is to combat, and the more likely it is to produce organic change in the arteries, heart or kidneys. There is no need to advise that the blood-pressure instrument be used as a part of all general examinations, but there is great need for a more intelligent observation and valuation of its findings.

ARTERIAL HYPERTENSION.

BY

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Arterial hypertension, one of the commonest of disorders, has been the subject of very voluminous literature and much medical thought for close upon a century; yet unfortunately, the majority of these studies have advanced but little its etiology, significance, and treatment.

Since the days of Richard Bright who in 1836, observed the cardiac hypertrophy and dilatation occurring in chronic nephritis cases, various observers who followed him have considered hypertension and cardiac hypertrophy the result of chronic nephritis. Taube, following him, considered that the hypertension was due to the contraction of the renal blood-vessels and consequent cardiac hypertrophy necessary to drive the blood thru the kidneys to maintain renal function. Ewald and Potain extended this, in that they believed there was a general vasoconstriction due to an irritated kidney reflex. Mahomet, noticing cases that had hypertension even for years before any renal disorder became evident, described what he called a hypertension prealbuminuric state

of Bright's. Albutt, in more recent years, found many so-called prealbuminuric Bright's cases with hypertension, which never developed any nephritic signs even until the time of death. Janeway, in 458 cases of blood-pressure over 160, found 116 with neither albumin nor casts, such cases by various authors being described as "benign" or "essential" hypertension, "hypertensive cardiovascular disease," "hyperpiesis," etc. Certain it is that clinically as well as pathologically, a large percentage of hypertension cases seem to exist with little or no demonstrable evidence of nephritis. The pivotal idea has always been that a diminished excretory activity of the kidney results in efforts intended to restore the normal renal function, among these being an increased arterial pressure. In animal experiments it has been demonstrated that reduction of the kidney substance does to some extent increase blood-pressure, ligation or complete obstruction of the ureters, or the anurias of certain poisons which specialize on the kidneys such as bichloride of mercury, this does not particularly occur. A similar example is found in the chronic obstructive prostate case, the blood-pressure may rise to some extent and is often greatly relieved after the introduction of retention catheters, yet the rise is not in due proportion to the degree of the obstruction and may not be particularly elevated at all. The fact that hypertension is an effort to increase renal function can hardly be substantiated, as it can be shown that the hypertension does not increase the circulation thru the kidneys but actually hinders it, and also, as Shackleford and others have shown, that the urinary output as well as a diminution of the albumin and casts is often accomplished by lowering the pressure. It has to be granted that, altho certain forms of degenerative nephritis are

not associated with any elevation of blood-pressure and cases are on record with very high creatinine, blood urea, uric acid, etc., with no hypertension, and equally so cases of hypertension where these metabolic products are not increased, yet possibly it may be agreed that in some cases of nephritis there may be a retention of substances of uncertain chemistry which could cause a generalized vascular spasm and hypertension.

Of greater importance than the kidneys is the part played by the blood-vessels in the production of hypertension. The systolic pressure is determined by the heart-beat and the diastolic pressure by the tonicity of the arteries and arterioles and probably the capillaries. In any rigid system of tubes open at one end, attached to a pump, in the intervals between the pumping pressure there would be no diastolic pressure or at least less pressure than if the tubes were elastic. Such a situation is approximated in arteriosclerosis where the blood-vessels lose their elasticity, contractility and tonicity and consequently the diastolic pressure falls below normal and the systolic tends to rise. In former years hardening of the arteries was considered as one of the main causes of hypertension, yet we know that extreme arteriosclerosis, especially if only in the larger vessels, may exist with little or no change in blood-pressure.

Alterations in the compressibility of the walls of the larger arteries as induced by arteriosclerosis are of no great importance in relation to elevation of blood-pressure as it can be shown that in arteries removed from the body and containing a known fluid pressure, extreme arteriosclerosis in itself only raises the compressibility some 10 mm. at most. When the tonicity of the arteries, or more especially the arterioles, is increased the diastolic pressure must rise, for the blood column is under greater tension, and

it follows that the systolic pressure must rise to maintain the circulation. This has, therefore, been considered the essential cause of hypertension and as such the systolic and diastolic pressure should rise and fall together. Variations, however, from this do occur and are divided roughly into three groups:

1. Cases of high systolic pressure and low diastolic (230-80), dependent on an increased force of the heart, and where the pressure is lowered it is mostly observable in the systolic drop. Such condition occurs in high-grade arteriosclerosis with well-compensated cardiac hypertrophy.

2. Relatively slight systolic increase and a high diastolic pressure (170-120) where there is necessarily marked increased tonicity or sclerotic obstruction of the arterioles and the heart not at all hypertrophied or failing.

3. Where systolic and diastolic are both high (230-140), where both heart and arteries are involved, as in certain cases of primary spasm of the arterioles and secondary cardiac hypertrophy.

In reviewing the pathology of hypertension cases it can at least speculatively be considered that in some cases of nephritis there may be metabolic substances retained in the system that cause a general vasoconstriction, raising the diastolic pressure and in due proportion as the heart also is stimulated or becomes secondarily hypertrophied the systolic also is raised. It is equally certain that many other factors can be responsible for hypertension, and it may be produced in either of two ways: one, where some degenerative process affects the media and subendothelial connective tissues of small arterioles, as for instance some infection either acute, as in diphtheria, tonsillitis, or various fevers, or more slowly from some focal infection, as in chronic tonsillitis, or dental sepsis or the ingestion of various chemical vascular irritants. Another method whereby vasoconstriction is caused may be shown to act thru the nervous mechanism of

the arterioles and capillaries, as for instance, in the case of hyperthyroidism. After hypertension has existed for some time it also appears certain that the strain on the vessels further causes a degeneration and fibrosis in their walls and so adds arteriosclerosis, or, as it has been sometimes called, arteriocapillary fibrosis, to the pathologic findings, a process that ordinarily seems to occur within a period of five years at most. The secondary changes in the kidney noted in arteriosclerotic cases may exist either as some fibrosis in the walls of the glomerular vessels or in various stages to the contracted, so-called atrophic or granular contracted kidney, so often mistaken by pathologists for a primary chronic nephritis. Later changes also occur in the heart vessels and are followed by cardiac weakness, auricular fibrillation, ventricular extra systoles, or other conditions associated with cardiac failure. Similar changes in the brain can cause the various cerebral symptoms so commonly noted in the termination of hypertension cases. The majority (approximately 50 per cent.) die of cardiac failure, about one-fourth die of cerebral conditions, brain edema, hemorrhage, or other results of arteriosclerosis, and the most of the balance die of uremia. Jane-way's statistics were: Cardiac, 46.7; uremics, 22.6; cerebral, 14.6; yet now we know that many so-called uremics were really conditions dependent on cerebral vascular conditions. This vascular process can be extended to include such organs as the pancreas, where similar atrophic processes can be observed pathologically, and may be in such degree as to be responsible for the incidence of a lowered sugar tolerance and increased blood sugar and the various grades of diabetic conditions not uncommonly noted in the course of hypertension cases.

Similar effects due to the contraction of

the smaller arteries may eventually produce the picture of the so-called albuminuric retinitis. Indeed, the condition of an individual's arteries may first be demonstrated by the ophthalmologist. Similar arterial changes involving the nutrition of the different organs may well account for the varied symptomatology of hypertension and arteriosclerotic cases.

In 1916 Weiss described an interesting method by which the circulation in hypertension could be studied and which has produced some results. He observed the capillaries under the nail matrix under the microscope and noted that the capillaries were elongated and tortuous and often particularly branched, all of which indicated vascular obstruction—a very different picture from the normal as also from the dilated capillaries in a cardiac stasis case.

In studying the clinical course and pathology of hypertension cases, a large percentage can definitely be shown as the vascular results of infective processes. Also the therapeutic results of removal of the infective focus may, by its prevention of the spread of the disease, permit of improvement or even clinical cure. These infections may, of course, also be the cause of some nephritis, but the resulting elevation of blood-pressure is, for the most part at least, from the generalized vascular lesions, and the renal condition and urinary findings, only part of the general picture. Various poisons such as lead, arsenic, etc., have to be classed in this group. Syphilis has been an interesting study for some time, many believing it an important factor. It is true syphilis produces profound lesions in the blood-vessels, especially the larger ones. Its distribution, however, is usually patchy and observed in the larger vessels and, altho hypertension cases sometimes do have positive Wassermann reactions, yet

syphilis, in proportion to its relative frequency, plays rather an unimportant rôle in the etiology of hypertension.

There is also a group, apparently the most benign form of hypertension cases, and those in whom we hope most for real cures, where there is a primary spasm of the arteriocapillary system. This condition, of course, if allowed to persist, will or may be followed by the secondary arterial changes as in the first group, and with the same terminations as regard the heart, kidneys and brain. In this group are the various endocrine cases.

Hypertension often occurs in hyperthyroidism which in itself may probably not be a cause but may act thru the medium of adrenal or pituitary or sympathetic nerve stimulation. It is interesting to note in autopsy work how often the adrenals are actually, sometimes markedly, hypertrophied in hypertension cases. Syphilis and various other diseases may cause an adrenal hypertrophy, and perhaps by its pathologic effects, which have been several times noted on the adrenal, can cause the occasionally noted co-existence of lues and hypertension. The influence of the adrenal has often been considered in connection with hypertension. Experiments have been conducted with injections of adrenalin and it has been noted in rabbits that serial injections were followed by a degree of arteriosclerosis. As against this, however, it has also shown that rabbits often show arteriosclerotic changes in cases having no adrenalin, and it has also been considered that adrenalin or impurities in it act as toxins producing degenerative changes in the small blood-vessels. It has been shown that injections of adrenalin usually raise the blood-pressure, especially so in hyperthyroid cases, yet peculiarly enough and a fact difficult of explanation that in hypertension cases

adrenalin actually, and often markedly, lowers the blood-pressure. It may be that in hypertension cases, as in asthma, the effect of sympathetic stimulation may tend to balance the pressor effect on the blood-vessels and so lower the pressure. A very frequent type of hypertension is found in climacteric cases, many women and some men apparently developing often a high degree of hypertension at this time. There is in these cases generally no evidence of nephritis, no impairment of renal function at first and often for years, and perhaps never. They may be due to ovarian, or corpus luteum atrophy, perhaps succeeded by a secondary pituitary and adrenal hypertrophy or possibly due to various metabolic changes we are not familiar with. It seems certain, however, that in many cases injections or administrations of corpus luteum or ovarian extract may be followed by very beneficial and more or less lasting reductions of blood-pressure, often surprisingly so. The relation of thyroid extract in hypertension cases is of some interest as it usually seems to lower it perhaps thru the medium of its action on the nervous and endocrine spheres. In this class of essential hypertension may perhaps also best be put those cases apparently due to worry and mental strain, a surprisingly large group in these strenuous days. These cases also may act thru an endocrine dyscrasia but seem in many instances to be markedly improved, if not cured, by rest and cessation from worry. Indeed, psychotherapy in its broadest sense, by installing confidence and by cultivating in the patient an ability to cooperate and realize the future with equanimity, may oftentimes achieve some real results in the treatment of hypertension, especially where a nervous etiologic element is considered, and is, to some extent, beneficial in all.

It can easily be demonstrated in almost

any case that rest alone will lower the blood-pressure, and limitation of at least strenuous exercise with intervals of rest is a constituent element in the treatment of all cases.

For years, and still to some extent, excess protein foods and their derivatives were considered to be the cause of hypertension. Patients were advised to take no meat, or only in very sparing quantity. It was shown by Mosenthal, and it seems to be a fact in a series of cases observed in the Kansas City General Hospital, that protein values, in varying quantities from 150 to 50 grams in equal caloric daily diets, and be given to high blood-pressure cases with no alteration in the blood-pressure whatever. It may also be possible that where no meat or proteins are taken the individual becomes anemic and loses vitality, and in this way the pressure falls, but if at this expense, it is hardly worth while. It is true that in nephritis cases the protein intake should be held within reasonable bounds yet in the average hypertension case, especially those not related to primary nephritis cases, a normal balanced ration free from irritating extracts or purins which might themselves damage the blood-vessels, is most reasonable. The heavy cereal diet usually prescribed for hypertension cases often succeeds in producing obesity, a factor in itself tending to cause cardiac hypertrophy and hypertension.

In polycythemia there may be some little hypertension and various workers have attempted to show that increased viscosity of the blood was the cause of hypertension. These have never been really substantiated altho certain cases of hypertension with plethora, many due to failing hearts, are vastly relieved from time to time by having some blood removed.

In 1904 Ambard and Beaugard, and later Allen and others, suggested that salt

retention is the cause of hypertension. It is true that in certain types of nephritis and in cardiac cases with edema salt administration increases the edema, yet apparently as regards the hypertension there is no relation to salt intake. Mosenthal, for instance, has shown that large quantities of salt can be taken with no variation of the pressure and that the chloride content of the blood bore no relation to the degree of hypertension.

Miller and Williams showed that when great quantities of water were taken there was some rise in the blood-pressure, and limitation of the water intake has been current practice in the treatment of hypertension, yet up to fifty per cent. of the blood volume can be injected intravenously with no special change in the blood-pressure. Foster and Davis studied twenty-two hypertension cases with reference to the urea excretion after administration of various quantities of water. Urea was somewhat diminished when the water intake was below 1,000 but at 2,000 c. c. daily, nitrogen excretion was at its maximum and the excretion of nitrogen often even more than the intake.

Hypertension is apparently not necessarily a compensatory factor that cannot be dispensed with or interfered with, and patients may be just as comfortable with a lowered pressure as with a high one, and, altho this has been a subject of much controversy, we are entirely at liberty, and it should be our effort to lower the pressure as nearly to normal as possible. It, of course, might also be said of hypertension (as it does in some cases cause no symptoms), why try to reduce it? This latter procedure is extremely necessary if we study the future results of such cases.

If any conclusions can be drawn from these studies they are that hypertension is usually a symptom of some generalized

cardiovascular disease in the nature of some degree of increased cardiac force which may be purely cardiac or associated with either some spasm or sclerotic condition of the arteriocapillary system. Even in nephritis, altho some retained metabolic process may in itself cause hypertension, yet the same processes causing the nephritis may by their action on the blood-vessels more definitely cause the hypertension associated with nephritis.

It is also of the utmost importance to discover the hypertension case early in its career and so ward off, if possible, the usual consequent secondary arterial changes and their effects on the systemic organs.

Further, also, the etiology of the hypertension must be estimated, be it from some toxic causes, some endocrine or neuropathic disturbance, or on the basis of nephritis, and by appropriate remedial measures attempt at least an arrest of the progress of the disease.

The height of the blood-pressure is not an indication of the amount of kidney involved, but is essentially an evidence of the degree of involvement of the arteriocapillary system. Hypertension is not necessary to maintain the circulation thru the kidneys, and every effort should in moderation be made to lower it and maintain it at a lower level.

Having determined the cause of the hypertension and the extent to which it has caused secondary systemic changes, a rational dietary calculated to support the nutrition and strength of the individual should be adopted in addition to the necessary limitation of exercise and various hygienic, psychopathic, eliminative, hydrotherapeutic, electrotherapeutic, and sometimes surgical remedies, administered to combat the etiologic factors involved and to lower the existing state of hypertension and so at

least prevent the incidence of the serious terminal events of this disease.

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HIGH BLOOD-PRESSURE.

BY

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There are many problems in life which, for lack of proper understanding or inability to solve, we are compelled to refer to the teleologist or metaphysician. Nevertheless, the laws of general biology apply to all living matter and in this respect there seems to be little, if any, difference between the animal and vegetable kingdoms. The forces of environment are sufficiently great to produce profound changes in both of their physiologic properties. Living matter is constantly undergoing changes in its adjustment of life. These changes may be looked upon as repair and waste. Those structures of the body which are disused become atrophied, and those on which greater demands of energy are made become stronger or larger. To this we apply the term "compensatory."

Regarding internal processes, John Fiske says: "We see that direct equilibration, which consists in continually arranging all the units of the organism in accordance with their physiologic polarities, exemplified alike in heredity and in the correlation of growth." A remarkable illustration of this foresight may be found in the morphologic changes occurring in the brine shrimp (*Artemia maritima*). Schmanekewitsch observed that one species of this crustacean, *Artemia salina*, lives in brackish water while *A. Milhausenii* inhabits water which is much more salty. They have always been regarded as

distinct species, differing in the form of the tail-lobes and the character of the spines, and yet, by gradually altering the saltiness of the water, either one is transformed into the other in the course of a few generations. Unquestionably the change brought about in the structure of this crustacean must be due to the strength of the salt solution in which it lives—in other words, salt plays an important part in its life.

It is quite a jump to compare the life of man with that of a shrimp, altho the expression is commonly employed contemptuously with reference to both mental and physical attainments. However, if we believe that the laws of biology are universal and applicable to all things living, even to a shrimp, there is no reason why we should not believe that salt may have some profound influence on the physiologic functions of man.

There seems to be at the present time much controversy over the problem of high blood-pressure. Some have considered it a riddle. To others it seems to be a Gordian knot, too tangled to be untied. However, if we are unable to solve the riddle of high blood-pressure we may by inference attribute it to environment and by analogy arrive at its cause. For example, there are certain people who are not afflicted with high blood-pressure. The Chinese, for instance, have a low blood-pressure. According to measurements made by McCay on Hindus from Lower Bengal, and the data secured at various times for the Filipinos, the systolic pressure in the natives living in the eastern tropics is uniformly low. An important fact which might have some bearing on the absence of hypertension in this region is that these people are abstemious in the use of salt. Furthermore, scientific investigations conducted by Ambard have shown that in high blood-pressure the

plasma shows an increased chloride content, and the experiments which tend to show that salt is a factor in hypertension demonstrate that a salt-free diet lowers the tension. However, high blood-pressure cannot be looked upon as a disease. It can be no more than a symptom due either to some functional or organic derangement; it cannot exist independently of these causes.

The view which the writer holds regarding high blood-pressure is that it is an effort on the part of nature to compensate for the lack of oxygen in the blood, for the reason that the presence of an abnormal percentage of sodium chloride in the plasma prevents the absorption of oxygen and therefore a deficiency of this essential element exists. To compensate for the lack of oxygen the heart is of necessity compelled to exert a greater energy in a vain effort to supply oxygen to the red corpuscles.

The problem of high blood-pressure may be summarized in one word, namely, "sub-oxidation." The treatment, therefore, is obvious and simple. From the dietetic viewpoint a restriction of salt is the first essential. From the viewpoint of treatment the administration of such substances as will throw down the excess of sodium chloride which has accumulated in the tissues is the rational therapeutic procedure. Physicians who have employed this method of treatment have been able to reduce high blood-pressure thirty-five points or more, and at the same time have noticed many recuperative changes in the body, such as the absence of edema, more facility in breathing, absence of exhaustion or fatigue on slight exertion, changes in the epidermal structure such as better texture and freedom from desquamation, an increase in the number of red corpuscles and improvement generally. While it may appear to some as

rather unscientific or irrelevant to speak of food while discussing the medical treatment of a pathologic condition, it nevertheless remains a fact that the health and existence of every living organism is materially dependent upon diet. This is borne out in the case of a patient who, upon being rejected by an insurance company because of high blood-pressure, reduced it to normal by adopting a vegetable diet for one week and using a modicum of salt. While it is possible in rare cases to obtain this result by diet alone, a persistent high blood-pressure requires more rational measures. The treatment, then, according to the above suggestions, may perhaps be worthy of consideration.

RETINITIS OF HYPERTENSION.

BY

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One of the most interesting and instructive observations that can be made in following the course of a patient who exhibits other signs of systemic disease is the change that takes place in the fundus of the eye. To the keen observer who has mastered the use of the ophthalmoscope the changes seen in the retina and choroid are quite characteristic of the cause of such changes, while to those less acquainted with ophthalmoscopic pictures there are presented visible evidences of systemic conditions quite well known to him by other means.

The most important structures that can be noted with the ophthalmoscope are the nerve head and the retinal vessels, and it is mainly around these structures that the pictures of systemic disturbance are built. In the normal eye the blood-vessels are in-

visible and are only followed by means of the visible blood stream, and the condition and course of retinal vessels can be determined only when they contain blood. Here the size of the blood stream and the course of the vessel become of great importance, and considerable study has been given to their behavior under varying conditions of health and age.

In any description of a fundus, the arterial tree stands out as the most significant. It may be seen from the area which is most often affected in retinitis associated with disease of the cardiovascular renal system that the most important changes take place in that part of the fundus which is most easily examined, but which is also most useful to the patient. In the neighborhood of the optic disc and the macula can be found the greatest changes that take place in the eye as the result of toxemia and disease.

The retinal artery enters the globe thru the optic nerve, thru the lamina cribrosa, where it is closely accompanied by the retinal vein and surrounded by the substance of the optic nerve and then appears quite free in the optic cup, except where covered by a thin layer of nerve fibers. As it is observed emerging from the disc, the artery is seen along its axis with the blood current flowing toward the front of the eye. As the branch arteries pass over the disc margin into the retina they are seen in a plane perpendicular to the line of regard of the observer, and axial changes in the course of the vessel are not so clearly made out. However, the depth of the vessel may be estimated by comparing it to another vessel crossing it, or running near by. Changes in the axial course of the vessel when viewed in this plane may be mistaken for changes in its caliber, as well as in its reflex stripe and lead to error in diagnosis.

In the normal eye the systolic blood-pres-

sure in the retinal artery at the disc is estimated at 90-100 mm. Hg., the pressure in the retinal capillaries at 40 mm. Hg., and the venous pressure 22 to 25 mm. Hg. The diastolic pressure in the retinal artery at the disc is similarly estimated at 35 mm. Hg. The relation of blood-pressure and retinal blood-pressure has been estimated at as 1. is to 0.45 in a case of normal blood-pressure. However, in the case of high general pressure, the ratio between the general pressure and the local arterial pressure is as 1. is to 0.50.¹

That there is a definite fundus picture characteristic of elevation of blood-pressure has been known since the early studies following the introduction of the ophthalmoscope, but the significance of those changes has not always been clear. A large amount of clinical evidence has now been viewed and classified, so that the findings in the fundus can be read into the record with other clinical and laboratory findings in every case of high blood-pressure. The optic nerve bears a direct relation to the blood-vessels of the fundus and must likewise be observed as to size, color, type of disc and, particularly, elevation or depression, evidences of edema or atrophy.

There is a great variation in the branching of the central artery of the retina, and the position of these branches in relation to the disc margin. In most normal eyes the central artery divides into two or four branches within the nerve head. These branches may leave the disc in different directions and angles so that they are visible along axial and tangential lines. In the normal eye no arterial pulsation can be seen unless the general blood-pressure is very low. If the intra-ocular tension be raised, as in glaucoma, the pulsation in the retinal ar-

teries becomes very marked, and if the tension becomes excessive, the circulation is dangerously impaired. The adjustment between blood-pressure, intra-ocular tension and the vasomotor control in the eye of healthy people maintains a high degree of usefulness to the eye, and even in very old people there may be no vascular change of importance. Venous pulsation is commonly seen. Great care must be exercised at all times in noting arterial pulsation. When present, it is seen over the disc as a wave traveling along the axis of the stream, while in the smaller branches it is seen as an actual dilatation of the vessel or a straightening of the bends and curves. The movement is most clearly seen over the disc as a rising and falling of the wall of the artery synchronous with the heart-beat. Pulsation of the retinal vessels is seldom seen in persons with a high diastolic pressure.

Sclerosis.—The retinal arteries, having no anastomoses are necessarily subject to the full force of the blood stream and, as a rule, absorb 65 to 70 mm. Hg. of pressure. This pressure can be much increased for short periods of time without danger, but high pressure over long periods produces degenerative changes. The vessels are also subject to primary degeneration and thickening from toxemia, syphilis, tuberculosis and other systemic diseases. All thickening of the vessel walls, or hypertrophy of one or more of its coats, may be classed as arteriosclerosis. The sclerosis of atheroma, of essential hypertension, and of toxemia and inflammation constitute the main classes or types.¹

The sclerosis of essential hypertension (the arteriocapillary fibrosis of hyperpiesia)

¹ A. P. Magitot, *Amer. Jour. Ophthal.*, Vol. 5, No. 18, p. 728.

¹ W. L. Benedict, "Retinitis of Cardiovascular and of Renal Diseases." *Amer. Jour. Ophthal.*, 1921, iv, 495-499.

is probably a product of two factors, a compensatory hypertrophy of the vessel walls to counteract the blood-pressure and a contracture of the arterioles in response to some unknown stimulus that may be irritative to the vessel and lead to degeneration and repair. That cardiac stimulation alone is insufficient to produce sclerosis even with the presence of long-continued high blood-pressure is the conclusion reached after study of exophthalmic goiter, while the high blood urea values found in cases of duodenal obstruction in which no fundus changes can be found argues against the probability of nitrogen compounds being the only factor in the production of retinitis of nephritis. The uniform thickening of the retinal arteries that ensues after continued hypertension is, probably, mainly due to the rise of blood-pressure where that rise has been gradual and accompanied by compensatory cardiac hypertrophy. In case the rise has been rapid and the retinal arteries have not had time to become thickened, edema and hemorrhages of the retina and optic nerve cause a marked loss of vision which often is permanent. These two types of retinal conditions that indicate clearly a rise of blood-pressure can be found: (a) Retinitis of hyperpiesia; (b) retinitis of malignant hypertension.

In the former the retinal changes consist in uniform increase in the width of the arterial reflex, arteriovenous compression,

and contraction of the arteries. It is differentiated from the other types of arteriosclerosis by the absence of beading, atheroma, plaque formation, tortuosity of small vessels, brick red color of the disc and frequent hemorrhages. Some of these features may be added to the retinitis of hyperpiesia but only in the event of systemic involvement, such as nephritis, atherosclerosis or constitutional disease.

The retinitis of malignant hypertension is an early finding and one of extreme importance. The first sign to be noted with the ophthalmoscope is a slight edema of the disc, which rapidly increases, reaching to five or six diopters of elevation of the disc within a few days. Exudate and hemorrhage are usually absent during the first ten days following the onset of the edema, but occur in great profusion after other signs of renal break occur, as albuminuria and uremia. It is well to bear in mind that marked papilledema precedes signs of nephritis in malignant hypertension by several days, and the headache and malaise suffered by the patient may be mistaken for symptoms of brain tumor, unless the blood-pressure is carefully considered. The retinal picture in late malignant hypertension is that of advanced nephritis with high blood-pressure and cannot be differentiated from the retinitis of advanced nephritis; yet, obviously, the order of occurrences of the two conditions is reversed.



GASTRIC CHRISIS IN TABES.

In lesions of the cord due to syphilis many patients complain of sudden severe pain in the abdomen, nausea and vomiting. At times this pain seems to be located in the region of the appendix. A careful history of the primary lesion with its period of incubation, the enlarged lymph glands, the other clinical manifestations, the positive Wassermann, or spinal fluid analysis, at times the Argyll-Robertson pupil, the marked Rhomberg, the loss of patella reflexes, all serve to differentiate this condition from acute appendicitis and various acute abdominal lesions.—Dr. Carl DaCosta (Ohio State Med. Jour.).

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

VIII.

"Wait, Khushhal, what is the meaning of the whiteness on your hand?"

"Whiteness," repeated the young man, "it is nothing. It has been getting that way for a long time."

His father would not accept this answer. "Spread out your fingers," he ordered, "both hands."

Only three spots were visible, but it was

have made all the offerings at the temple as you directed me."

"Then it must have been in a previous existence, for it is evident that you have sinned. Now you are without a husband, and your children without a father."

* * *

Ten years later Dr. Jordan, riding along a blistering country road, stopped at the call of a leper, legitimately clad in a brief loin cloth.

"Alms, *hazur*," he implored, "just look at my hands."

The two objects held out for his inspection were ghastly evidence of the disease.



(Courtesy of Presbyterian Board.)

FIG. 1. Leper Asylum.

enough. "Wait here, until I consult your mother."

"Are you certain?" Khushhal heard his mother ask inside the mud hut.

"Certain as I can be until I have paid a rupee to the *hakim* for telling me what I already know."

"Then he must go. But what will Chameli do? Oh, daughter of evil," she cried, addressing a young woman who squatted on the mud floor nursing a baby boy, while a naked toddler pulled at her arm. "What sin have you committed that you have brought this affliction upon your valuable husband?"

"No sin, please," was the response. "I

"Why do you beg?"

"My stomach still requires food," he replied apologetically.

"But why do you go roaming about like this?"

"There is nothing else, *hazur*. My family put me out when this disease came to me. I had two sons. Ten years I have wandered."

"Do you get enough to eat?"

"Oh, yes, *hazur*, since my fingers began to drop off, alms have come very easily. At first, before it had grown bad enough to excite pity, I had to wear large bandages. It was hard to get the cloth," he finished, trailing off into reminiscence.

"You had better go to the leper asylum, at Aliganj."

"They will shut me up," he shuddered.

"By no means. They will give you food and cloth and a place to live."

"Many thanks, *hazur, salaam*," and the leper hobbled off thru the white dust.

* * *

Near the gate of the leper asylum compound crouched two old men, their disfigured faces proclaiming the nature of the institution. "Peace be unto you, brother," crooned one, as Khushhal turned in from the fevered highway.

"Where does one go for cloth and food?" asked Khushhal.

"To the right. Follow the path to a door in that huge building."

The receiving orderly made a quick inventory of the new patient. "Can you walk? How many fingers have you? None? Then you cannot work. Here, room him with Dathwa, who still can work. He will cook your food," he explained to Khushhal.

The bath was an impressive ordeal, but its memory was soon eclipsed by the bandaging of the sore feet. A hundred yards, it seemed, of milk-white cloth, till his feet were really beautiful to look upon. With regret he heard the statement, "All right now, go and get some breakfast."

His stomach filled and his body adorned with five yards of muslin, Khushhal sat in the sun an hour later, admiring himself, when he was accosted by a woman who had been hovering near.

"Now tell me, did you not live at Bani-garh, and was not your wife Chameli, who bore you two sons?"

"You speak truly. Even my two sons did not save me. But who are you?"

"I am that Chameli, my lord."

"You? The disease came to you also?"

"Yes, my lord, just a few months after you had gone."

"And my parents put you out?"

"Just as they put you out. I have never seen the boys since."

"How long have you been here?"

"Seven years this *Holi* season. I fell ill by the roadside and could beg no longer. After I had to give up searching for you, I prayed the gods to send you here. So many came and went."

"You can still work?"

"Yes, only two fingers are gone. I will take care of you. The matron will transfer

Hira, who shares my room. She is quite helpless."

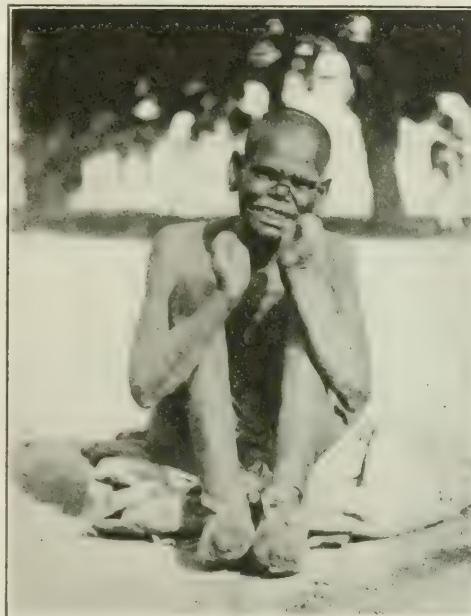
A quick kalsomining of the mud walls with cow-dung solution made it clean and fit for its new occupant.

"Here is a treasure I have saved for you more than five years," announced Chameli as her husband sat at his evening meal of bread and greens.

"What is it?"

"A charm to cure you. See?"

"How did you get it?"



(Courtesy of Presbyterian Board.)

FIG. 2. Khushhal the Leper.

"As a reward for kindness to my first roommate here. She died of fever, and I nursed her. Had she lived long enough, this stone would have cured her."

Khushhal examined the red stone closely. It was smooth and had a coarse string thru a hole in one end.

"Put it around your neck," she directed. "Its power is very great."

"Would that I had met that foreign Sahib five years ago," said Khushhal. "By now I might be well."

The varied life of the asylum gave occupation to all. Each person able to work was assigned a tiny garden plot. Those who could only walk about had the task of guarding these plots against crows and

other marauders. A leper band utilized all the musical talent available. The man with his soul full of music, who had wept because his hands were gone up to the wrist, found that the stumps served excellently as drum sticks.

To the music Khushhal listened with interest. He did not exert himself greatly, however. Mornings he sat in the sun, near Chameli's garden, but his presence did not trouble the crows. During the heat of the day he lounged under the spreading *nim* trees. Sometimes he would steal away and sit near the gate, to be seen by newcomers.

But he received little attention. White bandages were routine items here, and no one stopped to admire Khushhal's. He began to resent their lack of appreciation. He complained of it to Chameli.

"Never mind," she comforted him. "It is the custom. But you will have food twice a day as long as you live. And you have the charm."

Bodily comfort, however, was not an equitable exchange for this neglect. The call of the road sounded in his ears, even as he sat dozing. One morning early, when Chameli had gone to the garden, he slipped out of the compound and hobbled down the road as far as he could go. Then sitting at one side, he drew up his knees, and resumed the old cry, "Alms, *hazur*, just look at my feet!"

Spontaneous Variability of Blood-Pressure.—According to observations made by Mosenthal and Short, *Amer. Jour. of Med. Science*, Apr. 1923, marked "spontaneous" variations occur in the blood-pressure of all persons. In cases of hypertension a very great diminution of arterial pressure usually occurs during periods of mental and physical relaxation. Protein foods do not increase blood-pressure. Starchy foods may increase blood-pressure indirectly by bringing about obesity. There is no definite evidence in the literature that sodium chlorid raises blood-pressure. The level of the blood chlorids bears no relation to blood-pressure. In a series of experimental observations, the ingestion of 10 gm. of salt failed to raise the blood-pressure in cases of hypertension.



Lowering of Blood-Pressure By Extracts of Lymphatic Glands.—Scarpa (*Reforma Medica*, Naples, November 6, 1922) found that extracts of lymphatic glands seem to have an action antagonistic to epinephrin and, therefore, tried their use in cases of hypertension. The extract was well tolerated and lowered the blood-pressure a little (20 mm. mercury) twenty minutes after subcutaneous injection. The pressure, however, returned very soon to the previous height.

Relation of Suprarenals to Blood-Pressure Response During Cerebral Anemia.

—In their valuable paper in the *American Journal of Physiology* (March, 1923), Rogoff and Coombs gave the results of their researches concerning the supposed relation of the suprarenals to the vasoconstrictor phenomena brought about by cerebral anemia induced by occluding the head arteries for short periods. They found that the number of vasoconstrictor responses to cerebral anemia that can be elicited in an animal depends greatly on the basal level of blood-pressure that is maintained in the intervals between occlusions of the head arteries. When the basal level of blood-pressure approaches or reaches the spinal level, and occlusion of the head arteries fails to elicit a vasoconstrictor response, it is possible to improve the condition of the bulbar centers by elevating the blood-pressure thru intravenous injection of Ringer's solution, and again to obtain the usual response to cerebral anemia. This can, frequently, be repeated successfully a number of times in the course of an experiment. The so-called "dissociation" or "double" curve is not a constant phenomenon. It may appear and disappear (and again reappear) at various periods in the course of an experiment, or it may be entirely absent. There is no significant difference, in the ordinary average number, and the usual character of the responses to occlusion of the head arteries,

between normal animals and animals in which the epinephrin secretion is interfered with by ligating, excising or clipping off the suprarenals in acute experiments, or that have survived operations for interference with epinephrin secretion. The so-called "dissociation" or "double" curve is elicited as frequently after interference with epinephrin secretion as in normal animals. It is evident, therefore, that "suprarenal activity" (epinephrin secretion) is not necessary for eliciting any of the vasomotor effects which result from acute cerebral anemia.

A Resume of Symptoms and Signs in Some of the Principal Endocrine Disturbances.—Falk (*Jour. of the Missouri State Med. Assn.*, June, 1923) gives a comprehensive outline and detailed description of some of the rather confusing features that characterize endocrine dyscrasias, as follows:

THYROID.

I. Hyposecretion.

1. Preadolescent (cretinism).
 - a. Delayed developmental characteristics.
 1. Walk, talk, stand up, etc., late.
 2. Late tooth eruption.
 3. Underdevelopment of all bones.
 - b. Retarded mental development.
 - c. General symptoms.
 1. Thick tongue, pouting lips.
 2. Lordosis.
 3. Pot-belly, usually with umbilical hernia.
 4. Skin thick and dry.
 5. In the female early onset of menstruation (before thirteenth year usually).
 - d. Decreased basal metabolism.
2. Post-adolescent (myxedematous type).
 - a. Subjective signs.
 1. Failing memory and special sense acuity.
 2. Loss of physical strength and mental vigor (frequently).
 3. Somnolence (during day especially).
 4. Constipation.
 5. Increased weight.
 6. Decreased sweating.
 7. Cold extremities and general feeling of subjective cold.
 8. Susceptibility to foreign protein intoxication (hives, urticarias, etc.).

b. Objective signs.

1. Lardaceous hue of skin (pasty yellow).
2. Supraclavicular and posterior cervical fat padding.
3. Padding on back of hands and feet.
4. Generalized subdermal infiltration.
5. Skin dry and harsh; hair fine, poorly nourished and thin.
6. Narrowed palpebral fissures and characteristic infiltration of lids with puffing of face.
7. Bradycardia (frequently subnormal temperature).

c. Special signs.

1. Decreased basal metabolism.
2. Blood-pressure changes, usually increased, due to vascular infiltration. Is decreased in asthenic type of hypothyroidism. (*Vide infra.*)
3. Increased sugar tolerance.
3. Atypical type. Practically no change except decreased basal metabolism and few subjective symptoms, such as cold extremities and general loss of mental and physical tone, very frequently unrecognized, and still more frequently associated with insufficiency of other glands of internal secretion, probably fitting in with Falta and Meyers' description of pluriglandular sclerosis.

II. Hyperthyroid.

1. Subjective signs.
 - a. Paroxysmal tachycardia.
 - b. Palpitation and dyspnea.
 - c. Nervousness and emotional instability.
 - d. Insomnia.
 - e. Increased sweating, especially in axilla and palms of hands.
 - f. Loss of weight and strength (without loss of appetite). Ready exhaustion.
 - g. Tremor.
 - h. Enlargement of thyroid gland (usually).
 - i. Diarrhea attacks (tendency to).
 - j. Intolerance to heat.
2. Objective signs.
 - a. Skin moist, thin and elastic.
 - b. Hair luxurious, scalp oily.
 - c. Pulse rate increased, frequently slight increase of temperature.
 - d. Disappearing systolic murmur at base of heart (frequently).
 - e. Exophthalmos in certain types of hyperthyroidism with other eye signs.
 - f. Tremor.

3. Special signs.
 - a. Increased basal metabolism.
 - b. Decreased sugar tolerance.
 - c. Increased pulse pressure (due to enhanced vascular pulsation).

GONADS.

I. Gonad Insufficiency.

1. Preadolescent (partial) "Eunochoism."
 - a. Increased relative proportion of the long bones shown by increased lower measurement and long slender hand.
 - b. Increased span length.
 - c. Eunuchoid facies with receding chin, prominent narrow nose, hatchet face. Long, thin stature with "phthisical chest" (so-called), enteroptotic abdomen, etc.
 - d. Occasional female distribution of hair in male and minimum secondary sex characteristics.
 - e. In the female a tendency to imperfect menstrual periods and dysmenorrhea.
 - f. Puffing upper lids (occasionally).
 - g. Prominent upper central incisors.
2. Preadolescent (complete, true eunuch).
 - a. Symptoms about as in partial but generally emphasized, *no* secondary sex characteristics.
 - b. Complete lack of *libido*.
 - c. Imperfect development of sexual organs.
 - d. No tendency to development of obesity such as is characteristic of the post-adolescent gonad insufficiency.
3. Post-adolescent.
 - A. Surgical (degree of symptoms vary with degree of tissue removed).
 1. Nervous and emotional instability.
 2. Tendency to anxiety and compulsive neuroses (Timme).
 3. Characteristic obesity, generalized distribution with special tendency to trochanteric padding.
 4. Vasomotor disturbances, such as hot and cold flashes, etc.
 5. No atresia of the sexual organs in the male or female.
 6. Increase of weight (frequently). Tendency to trochanteric padding.
 - B. Natural (menopause) symptoms same as above, but usually less abrupt and more insidious in onset.

II. Gonad Hyperactivity.

Probably the etiologic factor in "macro-

somnia genito-præcox" in which there is a precocious development of the primary and secondary sex characteristics before puberty.

PITUITARY.

I. Anterior Lobe.

- A. Function: Bony growth, sexual development, hair and skin pigmentation.
- B. Hyposecretion.
 1. Preadolescent: Underdevelopment of all bones (type *en petite*). Underdevelopment of sexual organs; disturbances in the female (delayed onset, imperfect periods, or dysmenorrhea).
 2. Post-adolescent.
 - a. Skin pigmentation (chloasmic).
 - b. Retrogressive sexuality.
 - c. Decreased menstrual flow and periods of amenorrhea in the female.
- C. Hypersecretion.
 1. Preadolescent.
 - a. Normal giant stature (upper and lower measures equal).
 - b. Well-developed sexual organs and secondary sex characteristics.
 2. Post-adolescent.
 - a. Acromegalic tendency, such as whopper-jaw, separation of teeth, widening of malar processes, prominence of supraorbital ridges, spade hands, etc.
 - b. Increased size of hands and feet, due to increased size of flat bones, widening of long bones of hands and feet and mushrooming of the terminal phalanges.
 - c. Hypersexuality, with decreased *libido* in later stages.
 - d. Gradual proportional increase of the upper torso measurement over the lower. Increased hair distribution, over the extremities especially.

II. Posterior Lobe.

- A. Function. Fat distribution and smooth muscle control.
- B. Hyposecretion.
 1. Preadolescent: Classical type described as Froehlich's syndrome, which is characterized by obesity and infantile genital development.
 2. Post-adolescent.
 - a. Classical girdle, mammary and mons distribution of fat.
 - b. Tendency to constipation (probably

- from lack of sufficient smooth muscle stimulus).
- c. Tendency to high blood-pressure (in certain cases).
- C. Hypersecretion. No difference between pre- and post-adolescent.

- a. Emaciation.
- b. Increased basal metabolism, usually.
- c. Decreased sugar tolerance.

III. Middle Lobe (*Pars intermedia*).

- A. Insufficiency. Frequently associated with diabetes insipidus.

N. B.—Anterior and posterior involvement are frequently associated, especially the post-adolescent hyposecretion type. The signs above are known as hormonic signs—that is, those produced upon the organism as a whole by the activity of the glandular secretions in the blood stream. There are associated "neighborhood signs" (of Cushing) when the disturbance is accompanied by a neoplasm of the pituitary gland substance. These signs are produced by local pressure upon structures adjacent to the pituitary body, such as the optic chiasma, uncinate gyrus and by the general increased intracranial pressure.

BY-WAYS AND HIGHWAYS

Reminiscences Connected With Pasteur.

In a recent issue of *Gynécologie*, Dolérès gives a most interesting and valuable series of reminiscences connected with the life of Pasteur. The author was the first medical student to be admitted to Pasteur's modest laboratory and to be initiated, along with his many brilliant collaborators, all of them chemists, by Pasteur himself in the mysteries of microorganisms. He was the author of the first doctorate thesis that came out of this bacteriologic laboratory and was defended before the Faculté de médecine of Paris. A few weeks after Pasteur presented to the Academy of Medicine his communication on the probable cause of puerperal fever, Dolérès, who was then an interne at the Maternité, was performing a necropsy on a patient who had died from a puerperal infection; he then, for the first time, found himself brought into direct contact with Pasteur, who had been invited to be present and to collect

certain specimens for study. What impressed Dolérès most on this occasion was the pained expression that crossed the face of the eminent scientist, a laboratory man who, up to that time, had studied puerperal infection only in animals, as he contemplated this human body as it lay on the bare slab in the low, dismal dissecting room. Pasteur could not help uttering words of compassion for this poor creature who, owing to an implacable disease, had sacrificed her life in the performance of her material duty. "*La pauvre femme! La malheureuse!*" he exclaimed, from time to time, as Dolérès performed the necropsy before him and exposed the organs one by one, while Roux, who accompanied him, collected specimens of the pathologic fluids in the veins, the peritoneum and the Fallopian tubes. The thesis of Dolérès on the etiology of puerperal fever was received rather coldly by his critics. At the mention of bouillon culture mediums Professor Depaul exclaimed scornfully: "What has all this cookery to do with puerperal fever?"

Let me call attention also to these characteristic lines of a letter that Pasteur wrote to Dolérès a short time after the latter passed his doctorate: "You are about to enter, or, I may say, you have entered, the great field of practice. Seek to ascertain—but always exercising prudence and sound judgment—what part must be assigned to microorganisms."

Who Shall Practice Preventive Medicine.

Rush, writing in the *Journal-Lancet* (March 15, 1923), says that the medical profession is interested in all types of medicine, whether preventive or curative. As a matter of fact, there really is no hard and fast line of demarcation between preventive and curative procedures, any more than there is a dividing line between the metals and the non-metals. The medical profession is interested in all problems of public welfare, but when it comes to matters concerning public health they are the only ones who, thru tradition and training, are capable of handling the problems which present themselves for solution. It is the only profession at the present time that is engaged in real preventive medicine, and it is the profession of election for this type of work. Usually public health movements have been initiated by the medical profession, but in

many instances the work has passed into the hands of the laity because the members of the medical profession have been preoccupied with other important problems....

It has been claimed by some of the unthinking individuals among the laity that preventive and curative medicine are diametrically opposed. They do not realize that there is, in the last analysis, but little difference between preventive and curative measures. For example, all physicians take blood-pressure and make urine analyses during the course of a pregnancy, and not by the wildest stretch of the imagination can this be interpreted as a curative measure; it is a preventive measure, pure and simple.

Thru various educational movements which are now being conducted to instruct the public with regard to conditions which are definitely preventable, the great mass of the people are gradually coming to realize that the physician must be looked upon as a teacher and advisor, rather than one who is to be consulted only when symptoms of a diseased condition have manifested themselves. The physician, too, realizes that this teaching attitude is appreciated by the public, for by this means he is able to prevent premature deaths among his clientele. Not only does he spare the patient in question for future usefulness, but, more important, he does not divorce the rest of the members of that particular family. The physician realizes that the most appreciative patient is one who, thru early advice and proper instruction, has been saved from untold suffering and an untimely death.

and untried fields, roaming readily from one to another, regardless of essential qualities. For those who espouse the new things because of the money that can be made out of their popularity, there is no hope. Common honesty is their need. It must be conceded that the laity who seek relief from real or fancied ailments are honest, and a certain number of practitioners are also sincere thru their lack of training in fundamentals. Endorsements given by popular writers, clergymen and others, who lack the fundamental training required to make them competent to form opinions, cannot be condemned too strongly.

For all of these—at least those who are honest—the perusal of some of the charming and brilliant “Medical Essays” of Oliver Wendell Holmes is recommended. They are recommended also to all those interested in the progress of medical science and who wish material with which to combat the vicious propaganda so common today.

The story of Bishop Berkeley and his panacea, Tar Water, should be better known. A man of fine mind, liberal training and exalted character, he held the esteem of his countrymen to an unusual degree. “To Berkeley every virtue under heaven,” was said of him. Yet he “offered a remarkable illustration of a truth which has long been known to the members of one of the learned professions, namely, that no amount of talent, or of acquirements in other departments, can rescue from lamentable folly those who, without something of the requisite preparation, undertake to experiment with nostrums upon themselves and their neighbors.” He ascribed miraculous powers to tar water, made by mixing a quart of tar with a gallon of water, and decanting the supernatant water after forty-eight hours. It was useful in many ailments of man and animals, it would relieve the “tender nerves and low spirits” of hypersensitive persons, improve children, and relieve the British people of a tendency to “grow stupid or dote sooner than other people.” “He was an illustrious man, but he held two very odd opinions: that tar water was everything, and that the whole material universe was nothing.”

In 1796, Dr. Elisha Perkins put forward his “Metallic Tractors,” two pieces of metal about three inches long, blunt at one end and sloping to a point at the other, and sold at five guineas a pair. A patent was

Fads in Medicine.—One of the most useful accomplishments of the late Sir William Osler while in America, says a writer in the March issue of the *American Journal of Public Health*, was the impetus he gave to the study of medical history. We wish that this influence could have lasted permanently and have been extended to the laity. A general knowledge of past events would have a chilling effect on many of the new so-called schools of medicine, cults, fads, and so forth, tho it would not take the place of the divine gift of common sense.

Many minds revel in the occult and the miraculous, and many are attracted by new

granted to him, and an amazing popularity followed, not only in this country, but in Europe. They were used in the Royal Hospital at Copenhagen, and in 1804 a Perkinian Institution was founded in London. Within a few years his son, who had introduced the tractors into England, had saved more than ten thousand pounds collected from the faithful in Great Britain. The Royal College of Physicians and reputable members of the medical profession who stood out against the preposterous claims made for the wonderful tractors were criticized and denounced unsparingly.

The Royal Society accepted them and a book written in favor of them. Many persons of distinction, social as well as professional, endorsed the wonderful discovery, among whom are mentioned eight professors from four universities, twenty-one physicians, nineteen surgeons, and thirty clergymen, including twelve doctors of divinity. Both in America and England the proportion of clergymen who wrote glowing endorsements was large, and in England the chaplain of the Prince of Wales was among the number. A New England clergyman and professor wrote as follows: "I have used the tractors with success in several other cases in my own family, and altho, like Naaman, the Syrian, I cannot tell why the waters of Jordan should be better than Abana and Parphar, rivers of Damascus; yet since experience has proved them so, no reasoning can change the opinion. *** It is very probable, fifty or a hundred years hence, we shall know why the metallic tractors should in a few minutes remove violent pains ***." In the short time of forty years "he would have seen the descendants of the 'Perkinistic' philosophers swallowing infinitesimal globules, and knowing and caring as much about the tractors as the people of Saratoga Springs do about the waters of Abana and Parphar."

The world moves slowly along certain lines. In spite of the well-proven facts of bacteriology, new cults are constantly arising, proclaiming doctrines entirely untrammeled by science or common sense. The mental descendants of the "Perkinian philosophers" are now following the teachings of osteopathy, chiropractic, naturopathy, Christian Science, Hickson, Abrams or Coué. Clergymen are still giving aid and comfort to irregular methods of alleged healing, and expressing opinions on sub-

jects in which they have had no training. Hickson was recognized by the Church of England, and the Episcopal Church in this country, which at its General Convention in Portland, 1922, appointed a committee to go into the matter further. The learned Bishops of the Lambeth Conference passed resolutions condemning venereal prophylaxis, apparently forgetting the many innocent victims of venereal disease.

These things are discouraging, and public health is retarded by them. Education seems to be the only real remedy. It behooves all trained sanitarians, biologists and medical men to read medical history, and to teach the public at every available opportunity.

Allegiance to Ethics and Morality.—

We admit that it is harping on an old subject, but we again wish to emphasize the fact that medical men are not going to maintain the ideals for which they stand unless they all join together in a common cause (*Journal of the Indiana State Medical Association*, May 15, 1923). The petty differences of opinion, jealousy and indifference to the welfare of each other as individuals prevents the accomplishment of all that could be accomplished for the betterment of medical men economically and professionally. We each and every one of us owe an allegiance to our medical societies, and to the highest and best principles of ethics and morality. For many years we either have been working at cross purposes or we have been apathetic and indifferent to those things which make for a better condition of affairs, and we owe it to ourselves as well as those with whom we come in contact to put forth a more united effort to accomplish results. Therefore, when you are asked to approve and support plans and measures for the good of the profession, give the same your whole-hearted attention. In the next few months you are going to be asked to do many things that you never have been asked to do before.

Heart Stimulant.—One or two drops of a one per cent. solution of nitroglycerin is said to be equivalent to one ounce or more of brandy as a stimulant for the heart.—*Med. Summary.*



Improving the Physical Man.—Compilations of facts lead to the establishment of sounder bases for judgment. Past experience and special studies form the groundwork of this valuable contribution to the subject of life extension.

There are three divisions to the text: (1) The Physical State of Civilized Man. (2) The Problem of Industrial Health and Working Capacity. (3) Preventive, Remedial and Constructive Measures.

Part one cautions against too much satisfaction with what has been accomplished in improving physical man. He considers man from the experience regarding his military usefulness and quotes Pershing as an advocate of the doctrine of annual, physical examinations for the youth of this country.

Since the death rate from organic diseases is greater in the United States than in England and Wales, and mortality in the middle period of life is now greater than it formerly was, there is little reason for a sense of security in the decreasing general death rate. The death distribution is of greater significance. Further, there is presented the extent of man's degeneration and the means of extending the life cycle. There is a sound, economic note sounded in indicating the possible savings to the community that would result thru decreasing illness and diminishing fatality rates of disease during the period of greatest communal usefulness.

Part two discusses the morbidity and mortality rates of workers and their physical impairments. The influence of heredity and inherent limitations of mental capacity are not overlooked in evaluating the facts presented.

Infections, as relating to industry, are carefully reviewed but one wonders at the suggestion concerning focal infections. "In another fifty years, there should be no such problem as a pulpless tooth." Dentists are less sanguine.

Most excellent chapters deal with poisons, including tobacco, and the list, contained in the Ohio Act, of the occupational diseases and a classification based on the hazards of occupations.

Food deficiencies are clearly explained with more stress upon food excesses and the effect of overweight. The elaboration of the nature of physical and psychical traumata and apathies is of especial merit.

Part three involves the constructive factors

Health Building and Life Extension.—A Discussion of the Means by Which the Health Span, The Work Span, and The Life Span of Man Can Be Extended, by Eugene Lyman Fisk, M. D., Medical Director, Life Extension Institute of New York. New York: The Macmillan Co., 1923.

that may be utilized by federal, state, communal, industrial, familial and personal agencies. Emphasis is given to the proposed federal department of welfare, tho all forms of governmental agencies receive adequate attention. The general effect of the constructive proposals is less forceful after the profound impression made by the statistics, so ably marshalled in the earlier sections. Nevertheless, there is ample food for thought by those who are interested in extending the health and life of those whose industry creates the tangible resources of the world. The fullest protection of the industrial worker yields the primary wealth of industry.

Food, Health and Growth.—The Lane lectures given at the Medical School of the Leland Stanford Junior University during 1921 serve as the basis of this excellent presentation of the modern ideas concerning food and nutrition, particularly as applied to the welfare of children.

The five lectures indicate the necessity for a wider understanding of the basic elements in nutrition, because of their influence upon physique, mental application and education, and the part they play in increasing resistance to disease.

The chapter on vitamines is especially timely, well organized, and free from dogmatic conclusions concerning their present day usefulness in the light of our still markedly limited knowledge.

There is a full discussion of the food requirements of children, not merely in terms of protein, fats, carbohydrates and mineral salts, but in the light of their variations, because of different factors from infancy to late adolescence. The relation of theoretic caloric feeding to practical living is demonstrated in no uncertain manner and the text is strengthened by numerous charts, tables and graphs.

In the final chapter, dealing with the practical methods whereby the nutrition of children may be improved, education is recognized as the most effective agency. Health education in the home, at the school, the milk stations, and the clinics receives favorable comment as a prodigious force for overcoming bad habits of living, including faulty dietaries.

It is encouraging to note the emphasis placed upon positive teaching for the promotion of health, in place of corrective and palliative counsel. Recognizing the difficulty of re-educating an adult population, the burden of effort should rest upon every method of approaching the child population from every possible angle.

In this connection there is necessary a full development of medical inspection of school children, intelligent teaching of hygiene in schools and above all a more rational practice of hygienic living by the children and teachers.

Health is the paramount element at the

Food, Health and Growth.—A Discussion of the Nutrition of Children, by L. Emmett Holt, M. D., LL. D. New York: The Macmillan Co., 1922.

basis of teaching and should not be relegated to a subordinate position.

The nutrition class is properly estimated as a corrective agency, whose value for older children may equal that of milk stations for infants. The greater advantage lies in educational classes that will prevent malnutrition and spread the gospel of right eating and healthful living, and for these the school is of paramount importance.

Every physician will find much of profit and value for daily practice in this excellent presentation of the problems of nutrition involving foods, health and growth.

The Healthy Child.—In a simply written, well-balanced text, there is contained a valuable discussion of the problems of the pre-school age child. The stress placed upon training and education is admirable and should prove stimulating to parents groping for sane counsel. The mind is regarded as an extension of the nervous system, and thus the influence of environment upon the organization of nervous well-being is adequately emphasized, even tho there is too great pessimism in such statements as, "The city is a sterile waste for most children."

The discussion of the care of the body is almost too brief, tho satisfactory for ordinary guidance. Chapters on disease and disorders and emergencies elucidate the facts that should be known by all intelligent parents.

Regarding foods there is evident generally a rational viewpoint, which makes it all the more remarkable to find the statement, "It is possible to buy safe unheated milk and whenever it is available, it should be given to children."

As a whole, the volume may be recommended to interested persons as useful and dependable and based upon careful and reasonable thinking.

The Runabout Child.—The runabout child is a creature of joy and freedom in process of rapid evolution and it is fitting that a charming, genially written book should be dedicated to a discussion of his life and happiness.

Dr. Lucas has succeeded admirably in presenting the facts of normal physical growth and development. There is a wealth of material concisely presented, tho elaboration occurs when specific detail is regarded essential, as in the excellent chapter on foods containing a variety of specific menus.

The Healthy Child From Two to Seven.—A Handbook for Parents, Nurses, and Workers for Child Welfare, by Francis Hamilton MacCarthy, M. D., Assistant Professor of Diseases of Children, Boston University. New York: The Macmillan Co., 1922.

The Health of the Runabout Child.—The Journey From His Mother's Lap to the School Gate, by William Palmer Lucas, A. B., M. D., LL. D. New York: The Macmillan Company, 1923.

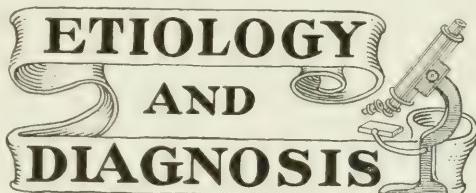
The defects of the pre-school child are enumerated as "things we don't want to have happen."

There has been less successful treatment of the mental and moral growth of the runabout child, save as his discussion affords evidence of a sane point of view that should prevail in meeting the problems in these categories. Play, habits and mental snags offer abundant opportunity to evidence an appreciation of the character and nature of little children that merits parental consideration.

On page eighty-six reference is made to the Habit Clinic of the Massachusetts Psychopathic Hospital, the Boston Psychopathic Hospital being meant, as tho this type of service originated there, whereas it had existed previously at the Health Class in New York City, at Mt. Sinai Hospital. Another trifling error occurs on page twenty-eight, where the first deciduous teeth to erupt are said to be two lateral incisors, instead of lower, central incisors.

A reading of the book will enable parents, and this includes doctors, their wives, as well as nurses, to give their runabouts a squarer deal and a more certain opportunity to gain in health, happiness, self-direction and self-control.

ETOLOGY AND DIAGNOSIS



Etiology of Hypertension.—According to *Zeitschrift fur klinische Medizin*, Berlin, (January 27, 1923) Weitz made careful investigations among the families of eighty-two persons suffering from hypertension. He found that a larger percentage of the parents had died from apoplexy or heart disease than in other families. Also that death occurred earlier in parents of younger patients than in the parents of older persons with hypertension. In his material, always one parent, at least, suffered from hypertension. Fully 50 per cent. of the brothers or sisters of the patients by the time the age of 55 was reached were suffering from or had died from hypertension. It seems that the condition is inherited as a dominant character. He did not find any indications suggesting exogenous factors like nicotine or alcohol. Such factors and emotions seem to injure the heart and make the existing hypertension more manifest. There was no relation of the general habitus to the disease.

Blood-Pressure in Valvular Heart Disease.—High blood-pressure in valvular heart disease, holds Andrews (*Medical Summary*, December, 1922), is mostly, if not wholly, a compensatory process and its therapy must be regulated with this in mind. Low diastolic in valvular disease, giving a wide pulse-pressure, suggests aortic regurgitation. This is not meant to suggest

that high blood-pressure is diagnostic of valvular disease of the heart. If present, it suggests that more or less compensation has been established and efforts to lower it may be prejudicial to the patient's welfare.

Hypertension and Its Relation to Cardiac Disease.—Fahr concludes his paper (*Jour. A. M. A.*, April 7, 1923) as follows:

1. Hypertension is the most constant and most important factor in causing chronic heart muscle disease, often called chronic myocarditis.

2. About 75 per cent. of all cases of chronic heart muscle disease are associated with hypertension, or follow in its wake.

3. Chronic or acute infection plays a minor rôle in the production of heart muscle disease. Acute infection is an adverse factor in chronically weakened hearts.

4. Approximately 50,000 persons in the United States die of hypertension heart every year.

whose systolic readings were 180 to 240 prenatally and 170 to 240 post-partum; the patients were under thirty years of age. The laboratory findings (phthalein excretion, blood chemistry, chlorides in urine) were within normal limits. Williamson concludes that such cases of hypertension without demonstrable kidney lesions are probably of toxic origin with the primary action taking place directly on the arterial wall. The prognosis is grave, both for immediate and subsequent life.

The Kidney Factor in High Blood-Pressure.—Braun (*Dutches Archiv fur klinische Medizin*, November 21, 1922) considers experimental hydronephrosis as one of the best methods to induce hypertrophy of the heart. He mentions three necropsies which he considers instructive instances of this. He reviews the mechanism of this process, and believes that the origin of the vascular changes in renal sclerosis is also down stream from the glomeruli, in the secreting tissue of the kidneys. The circulation influences the secretion, but the secretion of urine can cause changes in the blood circulation.



The Relation of Salt to Blood-Pressure.—The literature concerning sodium chloride is reviewed by Mosenthal and Short (*Am. Jour. of Med. Sciences*, April, 1923). These authors lay stress on the fact that the earlier writers (Ambard, 1904) believed that NaCl retention bore a direct relation to increased blood-pressure. This opinion has undergone gradual changes. Loeb pointed out as far back as 1905 that the forms of nephritis—the parenchymatous—characterized by salt retention do not as a rule have a high blood-pressure. It has been found also (Castaigne, Munk, Allen) that large doses of salt may produce dangerous or even fatal results in hypertension accompanied by renal insufficiency or by cardiac, cerebral or other complications. In essential hypertension—*i. e.*, without demonstrable renal involvement—sodium chloride may be administered in large doses without untoward effects. In a series of 24 cases showing a systolic pressure over 200 mm. Hg. the authors found the NaCl content of the blood within normal limits (500 mg. NaCl per 100 c. c. whole blood); and in 15 miscellaneous cases with normal blood-pressure definite NaCl retention was found. Mosenthal and Short consider variations of 30 mm. Hg. during a period of two to four hours as within the normal limits due to emotional causes, based upon their observations over long control periods. In eight cases of hypertension the administration of 10 gm. of salt was followed by variations within this range in six patients; in the other two showing a rise in pressure beyond these limits, nausea or extreme emotion may have been responsible. The authors conclude that in their cases of essential hypertension the ingestion of 10 gm. of salt had no effect.

Hypertension in Pregnancy.—Five parturients are reported by Williamson (*Surgery, Gynecology and Obstetrics*, 1922) in detail

Treatment of High Blood-Pressure.—Radium is credited with powers of reducing blood-pressure, states Greene (*Southern Med. Jour.*, June, 1923), it having been noted after treatment of cases for other conditions in which hypertension had been noted, a material reduction of pressure followed. Intravenous administration of radium emanations are said to be followed by reduction of the blood-pressure over prolonged periods.

Electricity, high frequency in the form of the Tesla or D'Arsonval current, given in the form of auto-condensation with the patient reclining, is rewarded with a state of mental and physical relaxation during the application of the current. This treatment is the application of heat resulting in stabilizing in an indefinite manner pressure and resistance with consequent lowering of the blood-pressure. It is probable that this particular treatment may have some regulating influence over a condition of endocrine imbalance. The electrical treatment at least has the effect of bringing the nervous over-active hypertension case to one's treatment room for a period of twenty minutes of absolute rest and relaxation in the midst of a business day and is rewarded by giving more satisfactory results and more lasting effect than is usually observed following the administration of drugs alone.

In concluding his exceedingly valuable and comprehensive paper, Greene says, that hypertension cases seen by the neuro-psychiatrist are

potentially mental subjects. They require comforting assurances, but at the same time a clear understanding, that untreated they are subject to the dangers of developing brain, heart and kidney diseases. They should be trained in the habit of quiet living, moderate salt intake, and reduced fluid intake to a degree compatible with renal health. They should learn that drugs are not used for hypertension ordinarily, but are applied for specific complications. Hypertension patients should be educated to a realization that less worry and more optimism are desirable. Food should be desired by the hypertension patient in quantities only sufficient to maintain a minimum of weight compatible with health. They should learn that using teeth, other than for digging one's grave figuratively speaking, in suicidal gourmandizing practices at the dining table, will surely be rewarded by a reasonable degree of good health, happiness and longevity.

The Diet In Its Relation to Hypertension.—In a recent issue of the *California State Journal of Medicine*, Comstock maintains that no line of treatment has been found to yield such satisfactory and uniform results as that dealing with alimentation. In a large number of patients it was the only treatment and was carried out with the patient at his regular duties. In their dietetic management we have for a number of years been governed by the following principles:

1. The patient's caloric intake is determined by his ability properly to metabolize it.
2. The protein is not too greatly decreased.
3. The diet includes an abundance of the so-called protective foods.

Caloric Intake.—If metabolism is faulty or difficult, care taken to introduce into the system only that amount of food actually needed to maintain the body, and for a short time even a slightly less amount can surely be only a reasonable procedure. We weigh our patients carefully and reduce their calories until they lose, say a pound or more in weight. As these patients are usually stout there is a distinct advantage in reducing their avoirdupois. It is surprising to what a low point the diet must be reduced before some of these patients will begin to lose 1,200 or even 1,000 calories in some cases. If they are overweight we permit only the slight reduction necessary for us to find their maintenance diet. In choosing fats, preference is given to cream, olives and walnuts. Carbohydrates may be chosen from most any source, those of fruits and vegetables being the best. Many of these patients are great bread eaters, and a decided reduction in the amount eaten, even to the point of eliminating it entirely for a time, has been found an advantage.

Protein Reduction.—It is safe to suppose that if there is to be a decrease in the total amount of food, the decrease better be in the purely oxidizable foods, fats, starches and sugars of which the body usually has a stock in reserve, and not in protein, the tissue-building food, a reserve supply of which the body never carries. Not only does protein enter into the formation

of tissue, but it also is essential to the normal metabolism of starch and fats. It must, therefore, enter regularly and sufficiently into the daily ration. Protein eaten yesterday does not suffice for today, as the body has no way of storing this food element. Comstock believes that the excessively low protein diet for these patients is a mistake. Experience practically confirms him in the belief that the more liberal allowance of protein is not only permissible but desirable. He has not seen a patient whose pressure was reduced by simply cutting down on the allowance of protein. With many of our patients we have actually increased it beyond what they had previously been taking. That no unnecessary burden be added in the way of excessive protein waste, preference is given to the foods yielding the complete proteins as milk, eggs, and leafy vegetables. In every case, whether by cutting down the energy food or increasing the protein, we increase the ratio of protein to energy food.

Protective Foods.—It is very essential that the diet of these individuals contain an abundance of the so-called protective foods, chiefly fruits and vegetables, to insure an abundance of alkaline and other mineral salts as well as vitamins. If the assumption that hypertension is a metabolic disease is true, this is important because of the part these play in normal metabolic processes. The giving of chemically pure and artificial preparations of these salts we have not found satisfactory. In order to get satisfactory results instruction must be specific and adapted to the needs and conveniences of each patient. We usually make out a daily program to be followed strictly until modified. This is changed every week for variety, if for no other reason. The patient is kept on this strict regimen until he becomes intelligent as to his particular dietetic limitations and his optimum diet.

There is a distinct advantage in knowing what the diet has been before the special program is begun. The author asks for a daily detailed list of all foods eaten during two or three sample days, and is always optimistic as to the dietetic possibilities in a patient whose diet has been something after this order: Breakfast—coffee, buttered toast, bacon, eggs. Lunch—bread and butter, tea, cookies, and the usual dinner with its preponderance of rich gravies, salad dressings, bread and butter and desserts, and its dearth of protective foods, (milk and leafy vegetables). For in the great majority of these cases a diet restricted in carbohydrate and fat, relatively high in protein and liberal in alkalinizing fruits and vegetables will bring most satisfactory results. The following brief case report may be taken as an example of the usual detailed dietetic plan we have followed. Of course, it should be said that the program is made to fit each individual case and no two patients are treated exactly alike.

Treatment of High Blood-Pressure at the Menopause.—Moorhead states in the *Medical Press and Circular* (April 18, 1923) that the

large majority of these cases gradually improve in health, and it is in consequence difficult to assign the exact value of medical treatment in bringing about this improvement. He is confident, that apart from the occasional use of bromides symptomatically, none of the usually prescribed drugs are of the smallest value. Iodides, nitrites, hippurates and the like, have all failed in my hands to achieve the smallest measure of relief. Rest, massage, the occasional use of high-frequency electricity, the relief of constipation, warm baths and similar hygienic measures are useful. He is further confident that corpus luteum extracts are of definite value in many cases. He has prescribed such extracts now for years, and altho the nature of the ill health prevents one from being able to offer definite data in proof of one's assertion, he is, nevertheless, convinced both from the statements of patients and from his own observation of their condition, that such extracts produce a decided amelioration of symptoms. They do not apparently produce any immediate fall in the blood-pressure, but as a result of clinical observation he has reached the opinion that a much more rapid return to normal, both as regards blood-pressure and as regards symptoms, is met with in those patients who are willing to take these extracts systematically for some months. Many patients, indeed, feel such immediate relief on starting corpus luteum treatment, that even when apparently well they are unwilling to discontinue the remedy to which they attribute all the improvement.

The Study of Blood-Pressure.—The history of blood-pressure determination is reviewed by Muller (*Munchener medizinische Wochenschrift*, Munich, January 5, 1923), who emphasizes its central regulation. Expelling the blood from a lower extremity does not change the blood-pressure, even in cases with hypertension. The peripheral resistance (smallest arteries and capillaries) and not the central force (heart) determines the blood-pressure. In cases of genuine hypertension, the tunica media of all small abdominal arteries is hypertrophic from increased function (Huchard's presclerosis). This accounts for the fact that considerable hypertension may become normal. Arteriosclerotic changes of the vessels are secondary. Affections of kidneys leading to insufficiency—even retention of urine—have an unquestionable influence. Further, the constitution may play a part. He finds in the families of such patients migraine, asthma, gout, diabetes and arthritis. Women suffering from uterine fibroids have usually a high blood-pressure, which may diminish after operation (not after Roentgen-ray treatment). The prognosis is not as bad as we thought before measurement of blood-pressure became universal. Digitalis and caffeine may be given if the heart becomes insufficient, and may even lower the blood-pressure. Coffee and tea are allowed; nicotin and wine must be forbidden. Low diet may be tried altho the general starvation during the war did not seem to influence hypertension. Moderate exercise

is to be recommended. Venesectiⁿons act symptomatically well. Hypertension is not a contraindication to any operation.

High Blood-Pressure and Its Relation to Intestinal Toxemia.—One of the most interesting and important discussions of this subject appears in a recent address by Sir Humphrey Rolleston (*The Lancet*, March 10, 1923) on "Reflection on High Blood-Pressure." Here it is stated that there is difficulty in disagreeing with Batty Shaw's view that the cause is toxemia. Also it is claimed that, as the toxins are unknown, for medical purposes it is essential to act on the data of the antecedent conditions that appear to play a causal part, such as an excess of protein food, worry, and diseases and conditions of environment which upset normal metabolism, one of the ways being by inducing disorder of the glands of internal secretion. However, in criticizing these remarks, surely it is logical to conclude that a pre-existing toxemia, caused by an excess of protein ingestion, would be sufficient to account for the effect of the several "antecedent" conditions with which high blood-pressure is said to be associated. In keeping with this is his statement that high blood-pressure is uncommon in women as compared with men. Here, again, the toxemic hypothesis affords an explanation. Women are generally small meat eaters. Altho they suffer from constipation and hypothyroidism, the toxic content in their food is probably less virulent. In men, on the other hand, the protein content of their food is high, mainly from the quantity consumed, and the decomposition products of this in the intestines find their way into the blood, from which a chronic toxemia results and perchance escapes observation until high blood-pressure or renal degeneration supervene as symptoms. Again, the argument advanced by Sir Humphrey Rolleston, that the toxins of intestinal putrefaction are unknown, does not seem seriously to militate against the toxemic theory of the etiology of high blood-pressure. After all, it cannot matter much whether the toxins in the blood are known or unknown. The chief point is to destroy by an intestinal bactericide the microorganisms causing them. It may be, however, that just as the physiologic action of drugs vary, so may the complex toxins evolved from intestinal putrefaction vary in the character of the disturbance of the metabolism to which they give rise. Upon this hypothesis could be explained the problem of the protean form in which intestinal toxemia manifests itself. The decomposition products of intestinal putrefaction have recently been the subject of much investigation in connection with intestinal stasis. The results thereof are not as generally known as they should be—at least, in relation to the etiology of high blood-pressure.

The final point with which Sir Humphrey Rolleston deals is that of treatment. "Of purgative and antisepctic drugs to minimize intestinal stasis and putrefaction," he says, "calomel has a high repute; minute doses (1/20 gr.) of

calomel exert an antiseptic without, of course, any purgative effect." And yet some recent researches by Bernard Fantus have discounted the generally-admitted claims for the antiseptic action of calomel. In his view, calomel as an intestinal antiseptic has still to be definitely proved. Possibly, therefore, the benefit due to calomel in the treatment of high blood-pressure is derived from its stimulating effect upon the intestinal mucosa, and the fact that reflexly it causes the gall-bladder to evacuate its contents, and thus releases an increased quantity of bile. "Altho the bile salts are weak antiseptics, the bile itself is readily putrescible, and the power it has of diminishing putrefaction in the intestine is due chiefly to the fact that by increasing absorption it lessens the amount of putrescible matter in the bowel." (Halliburton.) The use, however, of calomel in the treatment of high blood-pressure emphasizes the admission that a toxemic cause underlies its onset.

Essential Hypertension.—Webber (*Jour. of the Maine Medical Association*, January, 1923) concludes his practical and useful paper as follows:

1. The range of blood-pressure varies greatly.
2. Take pressure reading three times.
3. Essential hypertension occurs commonly, and in its early stages is not associated with kidney involvement.

As the disease persists, secondary changes occur in the order of their frequency, cardiac hypertrophy, dilatation and failure, apoplexy, nephritis and uremia. Treatment should aim to prevent these secondary changes.

Rest offers best means of reducing blood-pressure.

Diet has no direct effect upon hypertension. Indirectly, by reducing weight, diminishing red blood-cells and lowering vitality, may reduce pressure.

Exercise of some benefit.

Digitalis, chloral hydrate and bromides are most serviceable drugs.

Local Treatment of Cystitis.—Schottmuller in a recent issue of the *Munchener Medizinische Wochenschrift*, gives the results of his treatment of eighty-nine women and eleven men suffering from cystitis or cystopyelitis. After evacuating the bladder he injects by means of a rubber catheter 100 c. c. of a 2 per cent. silver nitrate solution into the bladder, and leaves it there five minutes, if possible. In case the tenesmus is too violent, this time is shortened, lest the silver nitrate solution, thru the contraction of the bladder, should be pressed into the urethra. When the silver nitrate solution has been withdrawn thru the catheter the bladder is rinsed out thoroly with physiologic sodium chloride solution until the remaining fluid is perfectly clear. He injects the sodium chloride to split the silver nitrate, lest any traces remaining in the bladder after

removal of the catheter should enter the urethra and cause irritation. In very sensitive persons narcotics are sometimes necessary. Sometimes one injection suffices to effect a cure, but usually three to four are required. Of the 100 patients last treated, 82 per cent. were cured, which Schottmuller thinks is a higher per cent. than has been cured by other methods, to judge by reports in the literature. Inasmuch as cystitis is always secondary disease after clearing up the bladder infection it is always well to inquire into this cause.

Tuberculosis of the Intestine.—In an article on this subject Dr. D. A. Stewart (*Canad. Med. Assn. Jour.*, January, 1923) refers to the ulcerative form which, according to his experience, is found in a fairly wide percentage of cases of pulmonary tuberculosis. It is likely implanted early, perhaps earlier than the lung lesion. It is almost universally present in the late stages of pulmonary disease and hastens, or perhaps causes, death. It is treatable and even curable in its early stages. Early diagnosis, especially of disease in the small bowel, is not yet satisfactory, but much can be done by careful study of symptoms and the opaque meal and enema. Surgical treatment is suitable in some cases, but is of limited applicability. The most promising treatment at present would seem to be the ultra-violet ray given by the quartz lamp, with perhaps the X-rays as well.

Balneotherapy and Hypertension.—Edgecombe gives his experience with balneotherapy in various types of hypertension (*Arch. Med. Hydrol.*, January, 1923). In cases of atheroma or senile arteriosclerosis treatment by baths alone or in conjunction with other methods of spa treatment is seldom indicated, and at best the results are only temporary. In peripheral arteriosclerosis and cardiovascular sclerosis an undoubted fall in pressure results, but this is merely temporary. In hyperpiesis baths along with other treatment are of undoubted service and give permanent results. In nervous hypertension pure balneotherapy gives marked and enduring results.



The Invention of the Stethoscope and Polygraph.—The story of the invention of the stethoscope is worth repeating, states Allan (*Glasgow Med. Journal*), not only from the intrinsic value of the method to clinical medicine, but also from general interest. Corvisart, the translator of Auenbrugger's book, and Napoleon's favorite physician, was the physi-

cian to the clinical school at La Charité, in Paris, and was much interested in heart disease. To this school there came in 1880 a student, called René Théophile Hyacinthe Laennec, a native of Brittany. A fellow-student of his was called Bayle. They were both impressed with the results of percussion, but felt that it left much to be desired, particularly with regard to diseases of the heart. Bayle was the first to seek further information by applying his head to the chest wall, in imitation of Hippocrates, who had used immediate auscultation to study pyopneumothorax. There was no attempt, either on the part of Bayle or of Laennec, to gain any other result than to perceive more distinctly the action of the heart when it was not perceptible to the touch. As Laennec says, "The method is always inconvenient to the physician and the patient; in the case of females it is not only indelicate but often impracticable; in the class of patients found in hospitals it is disgusting." In 1816 he was appointed chief physician to the Necker Hospital, and in that year was consulted by a young woman with heart disease, but who was very stout, so that percussion gave him no help. Immediate auscultation was inadmissible on account of the age and sex of the patient. He bethought him of the fact that sound is conducted along a piece of wood, and on this suggestion took a quire of paper, rolled it into a cylinder and applied one end to the chest and the other to his ear, and was surprised to find how well he could hear. This set him thinking and working, and, after trying various substances, he finally employed a cylinder of wood, one foot long and an inch and a half diameter, perforated, longitudinally, by a bore three lines wide. One end was hollowed out into a funnel shape. "This instrument I have denominated the stethoscope." For two years he studied diseases of the lungs and heart by this new method, and then read a preliminary memoir before the Academy of Sciences, and the next year published the first edition of his immortal work, entitled, *De l'Auscultation Médiate, ou Traité du Diagnostic des Maladies des poumons et du cœur, fondé principalement sur ce nouveau moyen d'exploration*. Within a month of the publication he was worn out and had to retire to the country, and seven years later he died of phthisis, one of the diseases the signs of which he had done so much to elucidate.

The advance in the knowledge of diseases of the heart as a result of the introduction of percussion and auscultation can readily be imagined. Heart sounds were heard, murmurs were recognized and very soon were related to disease of the valves and, while the pendulum may have swung too far, still the net result was phenomenal.

The work of these pioneers was taken up in this country by William Stokes, the Dublin physician, who, along with Robert Adams, also of Dublin, gave his name to Stokes-Adams disease. In 1825 he published a book, entitled, "An introduction to the stethoscope," in which he described the physical signs along with a description of the post-mortem findings.

The next advances were in connection with

the examination of the pulse, particularly by instrumental methods. Tho not in correct chronologic order, we shall first look at the method devised for measuring the force of the pulse. The instrument, called the sphygmomanometer, was first introduced in 1896 in its modern form, tho as early as 1876 an instrument had been devised by Marey. It was the invention of an Italian, called Riva Rocci, and embodied the rubber armlet and the mercurial manometer that is now so well known.

Tho the sphygmomanometer had added not a little to our knowledge of certain conditions, more particularly those associated with high blood-pressure, the advance has not been so great as has followed the introduction of graphic methods of depicting alterations in the cardiac mechanism.

The first instrument of this kind was introduced in 1860, and soon afterwards there appeared the Dudgeon's sphygmograph. Tho not so frequently used now as formerly, it gives a picture of the rhythm of the radial pulse and of the form of the pulse waves. It is subject to various instrumental errors, and was not in its original form supplied with a time marker. Its application was limited, and it was not possible from its use to differentiate the various irregularities or to indicate their relative significance.

By fitting a time marker and an additional writing point so that differences of volume in the jugular vein could be obtained at the same time, Sir James Mackenzie found it possible to analyze most of the irregularities of the pulse. The instrument was modified later, so that the pens wrote in ink, and thus a longer tracing was obtained. This instrument, called Mackenzie's ink polygraph, or a more recent type, the Mackenzie-Lewis polygraph, is at present the best instrument for clinical use. Mackenzie's work did more than that of any other single observer to place our knowledge of cardiac rhythm on a solid foundation.

Treatment of Tumors with Endocrine Extracts.—*Engel Zeitschrift für Krebsforschung*, Feb. 23, reiterates that in our research on cancer as a local affection we overlook the organism as a whole, and yet this is what determines whether malignant disease is to develop or not. He cites, for example, Rüder's report of a family in which all the seven boys developed epithelioma of the skin between the ages of 5 months and 10 years (the grandfather had had the same disease), while the five girls in the family escaped it. Hedinger found primary carcinoma of the liver at necropsy in two sisters. A connection between the predisposition to cancer, the constitution and the endocrine system seems to be beyond question when such happenings are considered, especially if we regard them from the standpoint of Freud and Kaminer's assertions that the serum and organs of cancer subjects do not destroy carcinoma cells as do the serum and organs of the non-cancerous. They demonstrated further that this faculty is twenty-one times more potent in the serum of infants than of adults, and they

traced this to the thymus, the potency declining as the thymus retrogresses. Engel has been experimenting with the protein products of endocrine glands, Abderhalden's optones. He injected this fluid subcutaneously into mice at points remote from the experimental inoculations. His research thus throws light on the potency of the protein products of the different endocrine glands and on the influence of the different glands on tumor production and inhibition. The pituitary seems to promote tumor growth, while the thyroid, and above all the thymus, check it. The elements responsible for this action seem to be the protein products in far advanced retrograde metabolism. Testes and ovaries were found inert. Ovariectomy in inoperable cancer of the mamma is justified by the stimulation of the thymus that results.

charge for such service in the private office, and to render it at rates which these persons can afford. At a fee of \$1 for each visit, plus special charges for Roentgen-ray work and laboratory examinations, it has been found that the patient has paid approximately 75 cents on the dollar. The average visits have cost the patient \$152, and the clinic \$2. This does not include 30 cents per visit, which is the approximate cost, to the college of rent, insurance and other matters in the overhead expense. Thus far, of every 100 applicants, twenty have been rejected; of these only one was excluded because he was able to pay private rates. Within the last few months the clinic has studied to effect every possible economy, and still a deficit remains. To meet this it has been decided to increase the admission fee from \$1 to \$1.50. This new rate went into effect June 1. No other fees will be increased.—*Jour. A. M. A.*

Intracranial Hypertension in Children.—In his comprehensive article in the *Semaná Médica* (February 1, 1923) Segers very properly points out that physicians wait too long before diagnosing intracranial hypertension, allowing the causal lesions to become irreparable. He cites a number of instructive cases, and warns that examination of the fundus of the eye should never be neglected or postponed when a child presents headache, vomiting and persistent constipation without well-defined cause. The neurologist locates the lesion and the frequent success with surgery in such cases justifies prompt intervention. Syphilis has been found a factor in not more than 1 per cent. of the total cases of brain tumors in children, and specific treatment is futile in these cases, altho the focal changes at the first doses of mercury often seem to confirm the diagnosis. In one girl, aged 10, the operation completely and permanently cured the left hydrocephalus. The symptoms had been noted fifteen months before, and the girl had been blind for a month. She is now healthy but blind. Another child presented symptoms of a tumor in the cerebellum. Under mercurial treatment, stomatitis and ulcerating sore throat developed, and the child soon died. Necropsy disclosed a single tuberculoma which could easily have been shelled out.

Insulin Instruction.—An announcement has been made that beginning July 2 a series of bi-weekly courses on the use of insulin will be offered at the Presbyterian Hospital. Morning and afternoon courses will be given thruout the summer. These courses have been made possible by the recent gift of Mr. John D. Rockefeller, Jr., a nominal registration fee of only ten dollars being charged to those physicians who take this course to cover the incidental expenses involved. Full information and application forms may be obtained from Dr. George A. Harrop, Presbyterian Hospital, New York.

Dr. Lambert's Injunction Upheld.—Judge Knox, May 29, denied the motion by the government to dismiss the temporary injunction granted to Dr. Samuel W. Lambert, May 8, against Edward G. Yellowley, Acting Prohibition Director, David H. Blair, Commissioner of Internal Revenue, and U. S. Attorney Hayward (in the case questioning the authority of prohibition officials to apply the quantitative limitations of the Volstead Act to physicians prescribing liquor) and at the same time granted a stay of the injunction pending an appeal which the government plans to take to the Circuit Court of Appeals. The medical men of the country feel deeply grateful to Dr. Lambert and his associates for having taken the initiative in determining medical rights under the Volstead Law.

NEWS NOTES & ANNOUNCEMENTS

Cornell Clinic Raises Its Fee.—A letter from the budget committee of the Cornell Pay Clinic has recently been sent to every physician whose name appears in the medical directory of Greater New York, explaining that the principal object of the experiment set up at the Cornell Clinic was to learn whether or not sound medical service could be rendered at cost to persons unable to pay the current

In Honor of Pasteur and Lister.—In the presence of high officials, writes the Paris correspondent of the *Jour. A. M. A.*, among others, the British ambassador, British delegates to the centenary of Pasteur, members of the university council, and representatives of the Franco-British Association, there was hung, in the main amphitheater of the Sorbonne, a marble tablet bearing this inscription:

On this spot, December 27, 1892, the date of the Pasteur Jubilee, the great Frenchman and

the great Englishman Lister greeted each other with an embrace.

This 25th day of May, 1923, on which was celebrated the centenary of Pasteur, the University of Paris erected this tablet in commemoration of this fraternal embrace, a symbol of the friendship that exists between the two peoples.

First-Aid Car.—The American Red Cross is about to put in service a Pullman car reconditioned and equipped to be used in demonstrating first-aid work. A lecture room will accommodate an audience of fifty persons, and is so arranged that it can be quickly transformed into an emergency hospital with a capacity of thirty patients. It will carry a large supply of first-aid equipment and hospital supplies and surplus food. Two competent surgeons and their assistants will constitute the staff. The car will cooperate with Red Cross chapters in the various towns and cities in an effort to promote and organize first-aid classes in Y. M. C. A. and boy scout organizations, and in schools and colleges. The first trip will be over the Baltimore & Ohio system.

The Red Cross took up first-aid work in 1899, and in the railroad campaign covered during the succeeding six years extended its service over 206,000 miles of railroad, gave 7,600 lectures and demonstrations, reaching over one million people. From 1910 to 1922, 164,121 persons took and completed a course of ten lessons, and received a Red Cross First-Aid certificate.

The instruction given has added tremendously to efficiency in dealing with accidents before the arrival of a doctor, and has often provided skilful assistants to physicians.

Narcotic Registration Expires June 30.—Registrations of physicians under the Harrison Narcotic Act expire June 30. Physicians must register with the collectors of internal revenue in their respective districts on or before July 1. Members of the Association who are going to the San Francisco meeting will do well to register before leaving home.

Two Years of Prohibition.—In reporting on two years' accomplishments under the National Prohibition Act, the federal prohibition commissioner made special reference in enumerating the factors operating for good to the treasury decision, first suggested by the American Medical Association, which limits withdrawals of whisky for medicinal use to that which has been bottled in bond. In 1920, whisky withdrawals aggregated 12,389,529 gallons; in 1921, 3,243,845 gallons, and in 1922, 1,819,888 gallons. In discussing narcotics, the commissioner calls attention to the fact that the Harrison Narcotic Act was not intended to be a revenue-creating measure, but that, in 1922, collections turned in to the United States Treasury amounted to \$610,311.13 in excess of actual expenditures.

Notwithstanding this large cash balance, the appropriations provide for a bureau force of only eighty-two clerks, and a field force of only 182 officers and twenty-nine clerks. These employees cover the entire United States, and, in 1922, had under their supervision 268,258 permittees.

Insulin Funds for Fifteen Hospitals.—The gratifying announcement was made recently at the office of the Rockefeller Foundation, 26 Broadway, according to *The New York Medical Week*, that Mr. John D. Rockefeller, Jr., had given \$10,000 to each of the following hospitals in New York and elsewhere in North America, for more extended resort to insulin in treatment of diabetes:

Ann Arbor—University Hospital under direction of Dr. L. M. Warfield and Dr. L. H. Newburgh, \$10,000.

Baltimore—Johns Hopkins Hospital, Dr. W. T. Longcope, \$10,000.

Boston—New England Deaconess Hospital, Dr. E. P. Joslin, \$10,000.

Chicago—Presbyterian Hospital, Dr. R. T. Woodyatt, \$10,000.

Cleveland—Lakeside Hospital, Dr. C. F. Hoover, \$10,000.

Iowa City—University Hospital, Dr. C. P. Howard, \$10,000.

Montreal—Royal Victoria Hospital, Dr. C. F. Martin and Dr. H. H. Mason, \$10,000.

New Orleans—Touro Infirmary, Dr. C. C. Bass, \$10,000.

New York—Psychiatric Institute, Dr. F. M. Allen, \$10,000.

New York—Presbyterian Hospital, Dr. W. W. Palmer, \$15,000.

St. Louis—Barnes Hospital, Dr. R. A. Kinsella, \$10,000.

San Francisco—Lane Hospital, Dr. A. W. Hewlett and Dr. T. Addis, \$10,000.

Toronto—Hospital for Sick Children, Dr. Brown and Dr. F. G. Banting, \$10,000.

Toronto—Toronto General Hospital, Dr. D. Graham and Dr. F. G. Banting, \$10,000.

Toronto—University of Toronto, Banting-Best Fund, Dr. F. G. Banting, \$5,000.

Dr. Banting's Toronto affiliations were made the largest collective beneficiary in recognition of his service as discoverer.

Mr. Rockefeller's endowment was designed to bring the extraordinary boon of the new pancreatic extract, discovered less than a year ago by Dr. Frederick G. Banting of Toronto, within reach of both the medical profession and the non-paying public. This twofold purpose of the gift was described as:

1. To increase the number of free ward patients who may be treated with insulin.

2. To teach the physicians in general practice the proper method of employing insulin in the treatment of diabetes.

The period during which the sums, represented in the gift, should be expended is not specified, but is left to the discretion of the recipients. The hospitals were selected by a committee, under the chairmanship of Dr. Simon Flexner of the Rockefeller Institute.

RATIONAL EXERCISE IN THE RELIEF AND PREVENTION OF HIGH BLOOD- PRESSURE.

The great curse today of the average business man who reaches middle life, is his tendency to become a victim of an inactive existence. The daily demands placed on his time lead him to stop at his desk until the last moment and then if, as is usually the case, he lives some distance from his office, depend on a taxi, or some other means of rapid transportation to get to his home in time for dinner. Too often he eats heartily and spends his evening at the theater, or at some other entertainment, which only means continued inactivity and a further tax on his digestion imposed by a late and hearty repast of rich foods. As the night wanes he goes home, again putting forth the least possible exertion, thru the aid of a taxi and, when he arrives, there is nothing to do but to go to bed. Each day is a replica of the

before his eyes, and instead of being the happy, pleasant person he once was, he is irritable, grouchy and more or less constantly subject to a state of mental depression. Alarmed and worried he consults his doctor, who treats him faithfully for his indigestion, bowel inactivity and general run-down condition. For a while he may feel a little better, but without a change in his manner of living, he soon is as bad off as ever.

If his physician is a keen, wide-awake practitioner, he will promptly recognize the patient's condition and tell him the truth. He will tell him that he needs to go somewhere, where under expert guidance he can follow a rational common sense program, comprehending common sense, regulation of his diet and the rigid carrying out of intelligent exercise. The great problem for the individual is, where can he go to obtain the intelligent surveillance, advice and physical exercise, he so urgently needs?

During the last decade or so, recognition of the foregoing problem for business men has led to the development of many sanitaria, health farms and so forth, where those who had neglected and ill-treated their bodies could go for the hygienic attention needed.

Too often these institutions have been directed by incompetent persons, with the result that not infrequently a short sojourn at them has left the individual worse off than before he sought their aid and hoped for benefits. No ordinary person can conduct a health farm, or hygienic institution, as it should be conducted. Extensive experience in physical training and a high order of intelligence are required to be able to tell just what a run-down man, such as has been described above, requires, and to see that he gets it.

Fortunately, at Garrison, New York, there is a health farm that has become famous for restoring business men who have neglected their bodies, to a state of health and physical vigor. This health farm is conducted by Wm. J. ("Bill") Brown, an expert in physical training, who is known the country over for what he has accomplished in the field of hygienic training. We might devote our entire space to a description of "Bill" Brown himself, but it is enough to say, that he is a man who knows his business, and whose personality is such, that every one that comes to know him, becomes his loyal friend and admirer.

Few men in the United States have had the broad and extensive experience "Bill" Brown has had in building up the human body and teaching athletes how to make the most of their physiques. In fact, for nearly thirty years he has been engaged in physical education exclusively. During this time he has been perfecting a system of hygiene whereby the tired, depressed, overworked business man may be made over into the healthy, normal, happy individual which Nature intended him to be.

The system is one which is fully within the capacity of any man who is not afflicted with serious organic disease. The exercise is wholly under the supervision of "Bill" Brown himself, who carefully adapts to each individual the work which is best suited to his ability and



WM. J. ("BILL") BROWN.

others, full of business cares and worries, but almost completely devoid of physical exercise. Such inactivity all too often is accompanied by a neglect of the bowels and sooner or later, a strong and sturdy individual finds that he has so disregarded the hygienic needs of his body, that he has allowed it to lose its strength and vitality, and as Sir William Arbuthnot Lane expresses it, "become little better than a cesspool for the accumulation of toxic wastes."

Sooner or later an emergency may arise calling for a strong body able to meet some sudden and essential demand on its physical powers. But alas, just when the emergency presents its greatest need, the individual learns to his dismay that his muscles are unable to do the work he thought they were capable of. He takes account of stock and instead of finding that he has a satisfactory balance of health, he learns that his physical bank balance is perilously near to an "overdraft." Conditions he never suffered from before are all too evident and when he stops to think he is surprised to recall how poorly he sleeps, how frequently he has headaches, leg pains, dizzy spells, spots

requirements.

Owing to the personality of "Bill" Brown and the real regard, as well as confidence he inspires, the line of work he lays out does not seem a hardship to those who seek his advice and aid.

A brief consideration of the methods employed at this interesting institution may not be amiss. The average case entering "Bill" Brown's Health Farm for a period of training, with the object of obtaining reduction of weight, or a building up and increase as the case may be, is for the first few days considered to be a "trial subject." In other words, until the Farm physician has looked him over "for defects," organic or otherwise, the patient is not allowed to do anything of a strenuous character. The examination as a rule takes place during the first twenty-four hours, the physician carefully going over the new man, examining his heart, taking count of his pulse, the tension of same and giving special attention to his blood-pressure. The average business man today, owing to stress of big business, and under pres-

and raised in the man in which it was below normal! Indeed it often happens that two different men, widely different as to temperament, physique, and in every way that it is possible to be, will on the same diet, exercise and amount of sleep, in one instance have the blood-pressure lowered 10 to 15 points in ten days' time, while the other will have his raised an equal number of points!

What is the answer? Elimination, intelligently adjusted exercise, proper regulation of the diet—in other words, a common sense balancing of each individual's diet and physical activities, with due regard to bowel elimination.

The splendid work "Bill" Brown is doing in teaching men to adjust their physical manner of living, to take the right amount and the right kind of exercise, to eat rationally and to keep their bowels and skins normally active, is admirably shown by the notable improvement in the appearance and mental state of those who spend a few weeks at the Farm.

There is probably no better testimonial for



"THE HOUSE," BROWNSDALE.

sure, and worry practically all the time, usually comes to the Farm "loggy," soft as to tissue and muscle, and if he is around the age of forty, generally proves to be short of breath on the least exertion, tired, sleepy, morose, has no appetite, and all too often is unable to digest or assimilate his food. He is usually constipated and his body is loaded with accumulated poisons.

The Farm physician in going over the new addition to the Farm roster generally finds that the blood-pressure is up 20 to 60 points. The patient is immediately put upon a special diet, and while more or less similar exercises are resorted to by all in the "gym," these are varied in different ways according to each individual's needs, *i. e.*, as to length of time, extent of exercise, duration of each day's walk, etc. Diet is regulated as to starches, sugars, amount of salt, etc. In a week's time the newcomer is again gone over, often with the result that the blood-pressure, strange to say, will be found to have dropped in the man in which it was high,

what the Farm is accomplishing, not only in helping men to live as they physically should, than the constantly increasing number of business men who are making it a practice to visit the Farm for a two weeks' stay, not only once, but several times a year. They find it an investment that pays handsome dividends in health and well-being.

It is highly significant, moreover, that so many prominent practitioners of medicine are recognizing the splendid work being done at Brown's Health Farm, by sending a constantly increasing number of the over-tired and rundown business men who consult them for all manner of functional ills caused by sedentary living and neglect of exercise, to the Farm for a course of physical and health training.

It is a pleasure to call attention to an institution that is fulfilling its purpose and mission so well in teaching business men not only the necessity and importance of giving their bodies proper physical care, but what "proper physical care" means.

American Medicine

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July Fourth.—Ten years ago the editorial writer felt in duty bound to present, in the month of July, a vigorous editorial raging against the needless Fourth of July slaughter. Today, thanks mainly to the rigorous propaganda inaugurated by the *Journal of the American Medical Association*, the Fourth of July has become reasonably safe and moderately sane.

In 1903, when the new Fourth of July methods were begun, 4,449 persons were injured and 466 died as a result of Fourth of July fireworks. The casualties increased in number until 1908, when they numbered 5,623. From this time, the effect of public pressure began to bear fruit, until now firework casualties, with incident tetanus, are exceedingly limited in number.

A new generation is well under way, whose experience with pistols, high explosives, giant crackers, and the "day hideous" is exceedingly limited. Their traditions of Independence Day will be bound up in pleasant memories of a holiday enriched by pageantry, athletics, outings, and gala lunches. Their pyrotechnics are mainly those of exuberant spirits and pleasant, tho wearying, recreation. Few, indeed, of them will be maimed or blinded, powder-marked, or disabled, as a result of Fourth of July accidents. Tetanus will rob but few of them of the hope of further enjoyment of life.

Thus, within a decade, has reason overcome fervent patriotism, exploited to the point of national disregard of human life.

This, however, is but a single element of the altered state of mind of the body politic towards its future citizens. The entire trend of national thinking was more or less crystallized in the idea of the conservation of our national resources, with a complete recognition that the growing generation may be regarded as the most valuable in this group.

Undoubtedly, the Fourth of July will be attended by a number of accidents, drownings, fires, homicides, and explosions, with resultant death and disability. The headlines in the daily press will indicate the severe toll of a festal day. If, however, the files of ten years ago are consulted, the remarkable improvement in protecting the children of today will be apparent. Noise and fireworks no longer constitute the expression of sound patriotism. The establishment of sound protective influences for women and children, the maintenance of educational institutions, the demand for and the securing of justice for all men, the humane care and vocational education of the disabled, the acknowledgment of the spirit of the law of the land are far more powerful expressions of the true spirit of nationalism.

The idea of Independence Day is one which merits recognition and Roman candles, pinwheels, torpedoes, and giant crackers are not effective tools for bringing out the ideals and ideas that belong to a generation that should be conscious of the value of independence of body, mind,

and spirit. If there is any element of weakness in the growing generation, it cannot be said to be a lack of independence. For this reason, a day devoted to the interpretation of this phase of character should not be marred by the exhibition of agents which tend to destroy and decrease the power to remain independent.

The old Fourth, with its noise and belching flame, has given way to the new Fourth, with communal celebrations and an intensified belief in the value of sane living and sound thinking.

Health and Social Work.—On May 17, the fiftieth anniversary of the National Conference of Social Work was inaugurated, with the day devoted to the consideration of the problems of health. It is significant that the first general subject on the program should be a recognition of the important part that disease states play in reducing the general independence of human beings. In the résumé of the proceedings of the conference, as appearing in *The Survey*, June 15, 1923, one finds valuable suggestions and criticisms. Dr. W. S. Rankin, Secretary of the North Carolina State Board of Health, pointed out "Public health and the profession of medicine have a single objective, to wit, to supply treatment where needed." For this reason there is comparatively little difference either in the objective or the means of its attainment. It is impossible to draw a hard and fast line between physiology and pathology; between health and disease; between prevention and cure. He stressed the fact that the next step forward for both public health workers and the medical profession is a more careful alignment of forces, to be brought about by health officials endeavoring to interest local medical organizations, particularly county medical societies,

in seeing and assuming the medical problems of the public, as well as the medical problems of the private citizen.

The Presidential Address of Homer Folks emphasized the remarkable gains and advances that have arisen from shifting attention to the preventive side of all problems. During the past fifty years the average life-time in this country increased from forty-one years to fifty-six years. In human values this means a saving of more than one-half million lives annually, as a result of a reduction in mortality of more than forty per cent. It is patent that this splendid decrease in mortality has been accompanied by a reduction in current morbidity, so that today probably a million persons are well, who, under the conditions existent one-half century ago, would have been suffering some physical affliction. Tuberculosis, formerly the greatest factor in mortality, has moved down to fifth place, while typhoid fever is rapidly moving towards the point of rarity. Infant mortality has been reduced beyond the fondest hopes of those who worked so faithfully in the battle against summer diarrhea fifty years ago. Diphtheria, against which tremendous advances were made by means of intubation and antitoxin, bids fair to disappear with the more universal application of immunization. The mere relating of the definite decline in specific illnesses and diseases is the citing of statistical facts whose interpretation requires little imagination, but a considerable appreciation of the factors, which today are utilized in the struggle for education, health, and economic independence. The decline of disease is accompanied by the raising of living standards, more adequate incomes, a larger degree of familial happiness, and improvement in communal well-being.

"Improvement in health and in welfare

are not separate, or even different—they are the same thing." No one gainsays that the scientific preventive medicine of the past fifty years has added more to human comfort, health, and satisfaction than the entire era of five hundred centuries thru which we can trace the history of mankind. The prevention of disease is simple, direct, economic, and fruitful. The results are relatively certain, complete, reasonably permanent, and quickly achieved, while our efforts at cure or correction are, as a rule, uncertain, temporary, costly, and time consuming. Prevention is accepted as the most practicable measure for the moulding of the destinies of the future generations.

The program to be followed has not been completed, as the methodology is merely in course of its early development.

The American Public Health Association has already ventured to prophesy that by means of the more complete application of our present knowledge concerning the causes and prevention of disease, twenty years can be added to the average span of life within the next half century. Accepting this prophetic judgment, the burden of progress clearly rests upon the medical profession. Undoubtedly, as Dr. Rankin suggested, there will be necessary a practical coordination of public and private agencies and practitioners, in order to secure the benefits of their combined attack.

Hospitals, dispensaries, sanatoria, and practitioners must come into more close co-operation, or else the fullest progress in advancing specific preventive programs for the wholesale control of disease will be ineffective.

The problems of rural health, industrial hygiene, pay clinics, periodic health examinations, health insurance, mental hygiene, and other phases of social medicine will receive as great a degree of attention from

medical societies, as from conferences largely dominated by groups of laymen. The most successful phase of the efforts of the League of Nations lies in the field of public health, and the spread of international trust, as the basis of handling epidemic situations, is another evidence of the valuable contribution which medical men are yielding to the world. Whether one deals with the problems of emigration, interstate travel, or municipal control of epidemics, the basic principles are the same—mutual confidence and respect, willingness to cooperate, and enthusiasm for the introduction of scientific principles of proven worth.

The leadership in matters pertaining to health should not be vested in non-medical sanitarians, sanitary engineers, philanthropists, or social workers, but in the physicians of the world working thru their constituted organizations. They will develop future plans by conferring at definite times, with a view to strengthening old programs and devising new campaigns for promoting the health of the world and the freedom of mankind from the handicaps and penalties of preventable diseases.

Instruction Concerning Insulin.—The gift of one hundred and fifty thousand dollars by John D. Rockefeller, Jr., to fifteen hospitals in the United States and Canada, elicits unusual commendation. In a sense it can be regarded as affording the opportunity for a larger degree of experience in the treating of diabetes with insulin. Its significant character lies in the fact that its purpose mainly is for affording an opportunity for the treatment of a larger number of free patients, and also, laudably, to give physicians in general practice the occasion

to learn the methods of employing insulin in the treatment of diabetes.

This type of effort to afford post-graduate instruction to the medical profession thru the facilities of existent hospitals, not ordinarily devoted to post-graduate instruction, represents a marked advance in the method of reaching professional groups. Practical observation is of far more worth than the reading or hearing of technical papers or discussions. Combined with didactic instruction, clinical experience becomes the most effective way of educating medical students, whether in or out of college. It is to be hoped that in the utilization of this gift, occasions will be created whereby groups of physicians from surrounding territory will be enabled to take advantage of the services to be offered, so that the dissemination of knowledge may be as extensive as possible within the limitations of the funds provided.

Columbia University has already issued a prospectus of a course on "The Treatment of Diabetes Mellitus by Means of Dietary Regulation and the Use of Insulin," which is to be given at the Presbyterian Hospital in New York. Instruction is to be available to properly qualified practitioners of medicine, for a small fee of ten dollars. The course is to run thruout the summer, and as long as the demands for it exist. Sessions will be held ten successive days, with three-hour meetings in the morning or the afternoon. The instructors are regular members of the medical department of the School of Medicine, who have had special training in the care and treatment of diabetes, by means of insulin.

In the general provision for the course, wards of the hospital and dispensary will be available, together with laboratory experience, definite instruction in dietetics, and the clinical study of patients in the hospital.

Much benefit will accrue to those fortunate enough to take advantage of the type of instruction projected. Of greater importance, however, is the extent of the response that the profession is to make to the proffered extension of specific instruction thus afforded thruout the country. If this experiment proves satisfactory, it should open a new and effective line of action for the purposes of post-graduate instruction and make each hospital more conscious of its possibilities of benefiting practitioners who are not connected with the official staff.

The entire scheme of post-graduate instruction, as it has developed, has proven itself somewhat inadequate. However, there should be a generous expansion by making available instruction at institutions, in the neighborhood of which large numbers of potential students reside, rather than to expect isolated centers to attract post-graduate students to them. The North Carolina extension plan is suggestive of new values and methods of post-graduate service. The plan that is now provided for educating the profession concerning the treatment of diabetes with insulin indicates a method which should prove of considerable advantage. This is an extension in the right direction, of providing varying courses thruout the year, dealing with specific gains in medical research, diagnostic technic, and therapeutic management. If the introduction of insulin to the profession should result in a readjustment of the plan of post-graduate teaching, its benefits will be far-wider reaching than can be attained by its effects upon the welfare of diabetics.

Heat Stroke and Prostration.—Among diseases of a distinctly seasonal nature, heat prostration and sunstroke are dependent en-

tirely upon the interaction of climatic conditions and certain environmental indications.

In the *Statistical Bulletin of the Metropolitan Life Insurance Company*, May, 1923, one notes the tremendous variations in the mortality from heat and humidity, varying obviously with the frequency and protraction of periods of high temperature and distressing humidity. There is no definite method of determining the incidence of the dire effects of heat and humidity, save in terms of mortality rates, as there is no system of registration of those afflicted, save possibly in hospitals to which an uncertain proportion is sent for recovery.

The death rate curve conveys but a vague idea of the tremendous influences working in different years. In the experience of the Metropolitan Life Insurance Company, during the period nineteen hundred and eleven to nineteen hundred and twenty-two, 6.7 per hundred thousand of "Industrial Policy Holders" died from the effects of the heat, while in the year nineteen hundred and twenty only .2 per hundred thousand died from this cause. This represents thirty-three and a third times as many deaths from this cause during nineteen hundred and eleven as compared with nineteen hundred and twenty. The margin between the maximum and minimum heat fatality rates between nineteen hundred and nineteen hundred and twenty, inclusive, in the United States registration area is well evidenced by 12.8 per hundred thousand in nineteen hundred and one and .3 in nineteen hundred and twenty. No other single cause shows such tremendous variations in the death rate during the past two decades as do heat and sunstroke.

As is inevitable, the death rate from this cause is higher among males than females, owing to masculine occupation in fields of

industry which expose them to greater hazards from solar heat, not to mention the supplemental heat and moisture involved in a large variety of occupations. Many have believed that the negro is more or less protected by his pigment, but experience has shown, both in the North and in the South, that the heat prostration death rate of colored persons exceeds that noted for whites, and, incidentally, the highest death rates from the effects of heat are not found in the southern states.

Inasmuch as mortality from the influences of heat is definitely most marked among infants and elderly people, it is patent that the most effective decrease of this type of mortality involves more intelligent hygiene for the infantile and those persons over fifty years of age. As approximately half of the deaths from heat and sunstroke are those in persons over fifty years of age, special stress should be placed upon the protective measures, especially for those working under the industrial conditions existent in cities. It is not uncommon for plants to shut down, temporarily, under conditions of extreme cold, and it would seem equally intelligent, in definite industries, involving exposure to superheated conditions, to lessen the necessity for severe activities during days of extreme heat and oppressiveness.

Ventilating fans, and cooling systems, insofar as they are practicable, should be freely employed. Definite arrangements should be made to provide the types of first-aid requisite at the earliest indication of marked physical discomfort, whether or not attended with syncope. In connection therewith, it is advisable to educate workers concerning the type of dietary best fitting their needs during the heated term. The combination of dietary indiscretion, alcoholic indulgence, and the devitalizing influences of

excessive heat and moisture should be a matter of common knowledge.

The reduction of infant mortality is progressing, but, nevertheless, there are still large groups of mothers in communities who fail to appreciate the importance of keeping their children cool, instead of warm during the summertime. There continue to remain those who do not appreciate the hygienic value of sponge baths, a slightly decreased diet, and the addition of water with regularity, to promote infantile health. These indicate the general trend of information to be imparted, together with the fact that the shade is preferable during mid-day and that the comfort and safety of the children are of more importance than direct exposure to sunlight, while the mercury is soaring in the thermometer.

The fact that the sun is alleged to have cooled off five degrees is not to be regarded as a very material element in decreasing heat exhaustion or sunstroke. Common sense and the application of hygienic judgment, alone, can serve to lessen this form of mortality.

Poison Ivy.—Among the common and annoying ailments of the summer season is dermatitis venenata, principally due to poison ivy or poison oak. It has long been recognized that there is a considerable degree of variation in the susceptibility of individuals to the glucosidal poisons in these plants. The method of treatment of the inflamed skin has depended upon astringent and anti-pruritic remedies. The multiplicity of remedies advertised and utilized has indicated the weakness in directly overcoming the effects of the toxin upon the skin.

Albert Strickler, in *The Journal of the American Medical Association*, June 2, 1923,

discusses, in a most encouraging manner, "The Value of the Toxin (Antigen) of *Rhus Toxicodendron* and *Rhus Venenata*."

The method of treatment which is employed consists in the intramuscular injection of a solution of the toxin of the poison ivy. He administers from three to five injections, varying with the severity of the attack and the response on the part of the patient. The dosage varies from 0.3 to 0.5 c. c. The first two doses are given with a twenty-four hour interval, the remainder at intervals from forty-eight to seventy-two hours, depending upon the response of the patient. In his experience the skin is usually restored to its normal condition in from four to five days after treatment is instituted, and he makes use of no external remedies.

On the basis of his records of three hundred and fifty-six patients only 2.8 per cent. received no benefit and 2.5 per cent. evidenced merely a doubtful improvement.

From the statistical standpoint, his experience in desensitization is of still greater significance. Even tho the removal of susceptibility may be of short duration, and hence require renewal frequently, those who are subject to dermatitis venenata will welcome the opportunity to protect themselves during their wanderings thru the woods and over the fields.

The technic for immunization involves four intramuscular injections, three or four days apart, with a dosage of from 0.3 to 0.5 c. c. of the toxin preparation. After the intramuscular injections, the susceptible ones are advised to take the tincture of *Rhus toxicodendron*, or the tincture of *Rhus venenata*, as the case may be, by mouth, for a period of one month. The dosage by mouth varies from five to ten drops of the tincture, well diluted in water, after meals.

The report upon this treatment appears to be highly encouraging, altho the number of persons who thus far have been desensitized is too small to warrant special enthusiasm or confidence in the ultimate results. Thus far there appears to be no danger in the method of desensitization employed, and, in consequence, a trial would appear to be indicated on a larger scale. It cannot be denied that the principle involved is in consonance with those utilized in other disease conditions. The method employed is simple and readily given, and the promise of relief is so great that the method suggested should receive an extensive, practical trial during this year. If the end-results are in harmony with those anticipated, dermatitis venenata will have met its conqueror. It is to be hoped that future trials of this remedy and immunizing agent will justify the present conclusions and hopes of those who are advocating its utilization.

The Purification of Water.—The custom of the Chicago Department of Health of preparing tablets of calcium hypochlorite for the benefit of motor tourists and summer dwellers is highly commendable. The ever-increasing tendency of large numbers of people to take vacations increases the likelihood of water-borne disease. The possibilities of securing a safe water supply have increased materially during the past few years, but, nevertheless, there is considerable danger for those who are obliged to obtain drinking water without previous knowledge as to its purity or safety.

The use of calcium hypochlorite tablets is to be encouraged, despite all the efforts that are being made by state departments of health to protect streams and lakes from contamination from outhouses and drainage

of human or animal origin. The hypochlorite method of protecting the water supply is simple, easily managed, and highly protective in the face of a considerable degree of water pollution.

The methods of practical water purification by consumers should be extended, and the knowledge concerning the necessity and means of so doing should be widely advertised. Similarly, ample provision should be made for making available the necessary tablets, so that trampers, motorists, campers and travelers may be without excuse if their own carelessness leads to infection from drinking water from an insanitary source.

No vacationist's first-aid kit may be more usefully outfitted than by the inclusion of a substance which would protect him against typhoid fever. The autumnal toll of deaths due to infections that arose while seeking recreation will be diminished by a more extensive use of the effective water purifiers. Seeking life and vitality should be freed from the hazard of water-borne diseases.

Camping Courses.—The influence of health teaching in schools has entered upon a practical development. The aim to impart knowledge of hygiene in some form other than a dry, didactic method has attracted the interest of numerous organizations. In some communities prizes have been offered to teachers who submitted the best course of study and syllabus for teaching children in the elementary school. The Metropolitan Life Insurance Company has offered a series of prizes for teacher competitions in formulating the best course of study for teaching hygiene. This constitutes a move in the right direction, because, after

all, the success of the teacher depends upon her interest and enthusiasm, as well as her general knowledge of the subject-matter to be imparted.

Different schools require emphasis upon special phases of the subject. The problems of large cities, with numerous nationalities, differ widely from those established in rural sections, or, indeed, in small cities, with a reasonably homogeneous population.

Among promising advances is the establishment of courses in high school, within the home economics department, which build up the practical hygienic experience on the basis of theoretic teaching, that deals with a healthful recreation. Applied hygiene becomes part of the organic and unforgettable life of adolescents.

In the Southeastern High School, of Detroit, Michigan, there have been developed classes for boys and girls, dealing with camp and out-door crafts, involving two ninety-minute periods per week. The synopsis of these two courses is as follows:

No. 1. CAMP CRAFT FOR BOYS.

Camping Out, Camp Habits and Activities, Equipment, Fires, Planning and Preparation of Meals in the Open, Handy Mechanics in Camp, Edible and Inedible Wild Plants, First Aid in Camp, Laundering, Campfire Stories, Observation of Hotel Kitchen, Hikes and Practical Cooking in the Open. Talks by Sportsmen and Men Who Know the Out-of-Doors, Games and Contests.

No. 2. OUTDOOR CRAFT FOR GIRLS.

Habits and Activities in the Open, Equipment for Hikes and Camps, Camp Fires, Planning and Preparation of Meals in the

Open, Hikes and Practice Cooking in the Open, Woodcraft, Edible and Inedible Wild Plants, Handy Articles to Make in the Woods, Health and First Aid, Laundering in Nature's Laundry, Observation of Hotel Kitchen, Campfire Stories, and Indian Sign Language.

These represent a considerable effort to seize upon the educational content of the type of work that hitherto has been secured from private organizations, such as the Boy and Girl Scouts, Campfire Girls, and similar agencies, whose aim is to guide into healthful recreation the younger generation. The introduction of this teaching into a high school is significant, in that the educational methods were recognized in affording an opportunity for building up self-control, self-direction, healthful principles of living, and sound character. Rational hygiene is best secured thru the application of sound teaching to the problems of sound living.

Public Health and Medical Practice.—

Too frequently members of the medical profession fail to recognize in the public health movement an opportunity for greater communal service. Many are startled into illogical thinking by the efforts that are being made to conserve human life. Some still live who believe that the practice of medicine carries with it the right to have diseases to treat, and fail to recognize that the prevention of disease is more significant, useful, and satisfactory.

Some shriek paternalism, others cry out bitterly socialism, and others point to Teutonic or Bolshevik origin, without due recognition of the true underlying factors entering into the rapid evolution of preventive medicine.

In *Minnesota Medicine*, June, 1923, C. H. Scofield suggests that much of the criticism and complaint of the profession concerning the methods adopted and the work already done are unjust and inexcusable "for the reason that those making it have not made a sufficient investigation to form an intelligent opinion." It is unfortunate that Dr. Scofield states, "State medicine is sociology gone mad." Regrettably, because the definition of sociology as "the study for the betterment of the mentally and physically deficient" is unwarranted, narrow, and inaccurate. Sociology is "the science that treats of the origin and history of society and social phenomena, the progress of civilization, and the laws controlling human intercourse." ("New Standard Dictionary.") It is the science which deals with all that concerns men living together and having necessary relations with one another, by reason of their constituting society. Under this interpretation, State Medicine is not "sociology gone mad," but a reasonably normal development of human progress along the lines of making human relations happier, safer, and more conducive to satisfactory conditions of living.

There is an implication that public health has menaced the medical profession, whereas it has been of benefit. Opportunities for leading have been numerous and if public health work has been dominated to some extent by professional public servants, medical or non-medical, the medical profession has but itself to blame. Nor is there any gain made by terming those most solicitous of human welfare "professional uplifters."

Scofield is right in remarking, "As I see it all, the man in regular medicine has not been awake to his duties, possibilities, and dangers," and, in consequence, has become

panicky and lacking in constructive efforts to guide the public health movement thru giving it his entire support.

There are a few narrow-visioned men who appear to view, with regret, the decline of infant mortality and talk of the business that has been taken away from them by reason of the institutionalizing of persons with advanced tuberculosis. The medical profession, as a whole, does not pretend to claim a monopoly right for the continuance of the diseased. Its vital interest is in human values. Its aim is to attack disease, rather than to treat people. Sickness will always exist, and the necessity for therapeutic medicine will not decline, tho there will be a considerable variation of the age period at which the main medical services of a therapeutic type will be required. The truth of the matter is that the practice of preventive medicine involves far more general treatment of a corrective type than is appreciated.

The existence of large numbers of physical defects, as evidenced by the examination of soldiers, school children, and industrial employees gives ample evidence of the tremendous amount of medical service which has not been reached by physicians, still practicing the regular form of conservative therapeutic medicine. And, indeed, there is added thereto the growing awakening of the general public to the necessity of securing a wider degree of personal instruction in hygiene and the art of living than has been dreamed of hitherto by the medical fraternity.

It is for this reason that Scofield finally comes to the conclusion that, "Public Health will be of benefit, rather than a menace to regular medicine." Far better might he say that public health work is regular medicine.



Fees and Livelihood.—A few days ago the newspapers published a communication from Dr. Louis I. Harris, director of the Bureau of Preventable Diseases of the New York City Health Department. The matter printed was for the most part random excerpts from an article, entitled "Objections to Pay Clinics," read by Dr. Harris before a medical society. This went on to say that the fees of many general practitioners and most specialists are too high, and that is one reason why there is complaint in certain quarters about hard times, etc.

In a personal communication to the writer, Dr. Harris says that only a few sentences were quoted from his paper, which seemed to show up the whole profession in a bad light. But this was not his intention. It is, of course, unfortunate that such items get into the lay press before they are thoroly thrashed out in medical circles, but this question has come up time and again in and out of medical meetings, and yet no one has discovered a way by which it can be prevented.

The *Medical Week*, under the caption, "They Must Live, Too," published an editorial in the issue of May 5, 1923, taking Dr. Harris to task for lack of understanding of the conditions of private practice. This editorial states that a doctor starting out in a specialty faces an even harder struggle for existence than a physician entering a general medical practice. Further, that no matter what field the young specialist enters, he is forced into direct competition with men of experience and skill, and is, therefore, likely to fare badly. Now, we are not prepared to admit the latter statement as fact. As a matter of experience, a specialist may get even a quicker start than a general practitioner, because his practice does not come from the public but from medical friends. It should be obligatory that the would-be specialist practice general medicine for a period of from three to five years. He will then get enough general experience to make his judgment in special

practice of some value, and will not view the whole world thru the eye of a needle. Moreover, he may expect enough of his old patients who require special treatment to pay at least part of his expenses while getting started in the new field. As to the matter of competition with men of experience and skill, this is not so important as it may seem, for the latter have the "cream" which no beginner has a right to expect. He must wait his turn in line with the rest before he can hope to get the best, or at least the wealthiest class of patients. It is not strictly true, moreover, that only the "young man has the inability to obtain any but small fees." Many middle-aged specialists who have worked very hard and are thoroly competent have very few wealthy patients, for any one of several reasons, but chiefly because they have not drifted into a circle which leads wealthy patients to them directly or indirectly. A curious sentence in the argument against Dr. Harris' stand speaks of "the established specialist who is so careful not to enter into financial competition with his younger colleagues." If his like exists in Gotham he is as yet undiscovered by the most of mankind. The man higher up takes whatever comes, as is his right, usually at his own price, regardless of any colleague younger or older than himself. The practice of medicine, we take it, is a "free-for-all" game, and one need only be governed by common sense principles of ethics to make his position quite proper and correct. The editorial writer draws also a strange corollary from the above, namely, that "the chances of the latter's (the younger colleague's) success would be scant indeed did not this *esprit de corps* exist." This certainly sounds like a *non sequitur*.

The reason for high fees is sometimes defended by a deal of talk about the "tremendous overhead," etc. To our mind this is a poor excuse for any overcharge and is quite beside the mark. Nobody, for example, is absolutely compelled to pay \$3,000.00

annual office rent, even in New York City. Nor is he obliged to retain a retinue of nurses, secretaries, door-openers, technicians, etc., etc. There is too much of the "white collar" variety of doctor. We need more workers and fewer drones in the medical hive—fewer of those golfing specialists who are so driven with work that they must leave their offices at 4 P. M. every Wednesday, not to return until some time Monday. Anybody who neglects his work to that extent has no right to complain of hard times.

Much of the so-called "costly equipment" is wholly unnecessary—at least in many kinds of practice—not, of course, X-ray or electrical, where large expenditures are necessary. But in most lines of work \$1,000.00 will afford equipment which is wholly adequate.

It has been determined repeatedly in the courts and rather generally accepted, too, that \$20.00 per hour is satisfactory remuneration for the average medical man; this means, of course, during the hours which he chooses to work, not for the entire 24; \$10.00 a fair examination fee, which ordinarily does not require over 30 minutes; and \$5.00 for ordinary treatments which do not require over 15 minutes. However, many specialists who have "the call" charge \$25.00 for an examination and \$10.00 to \$15.00 for treatments. Of course, it is very easy to start an argument about fees. The man who can get high fees offers no excuse, and the man who can get only low fees offers every excuse. But the whole question must, after all, be a matter of conscience. There is this much to be said—that many a man with only a \$10,000 practice manages to pay his bills, sends his children to college, and lives a decent, orderly life, unharassed by the bill collector. Personally, we feel that he is much happier than the \$100,000 man who feels obliged to spend \$90,000 on a town house, country estate, Pierce Arrow, Packard, chauffeur, 57 varieties of clubs, and other claptrap maintained for the purpose of making a show and "getting the big business men." There is absolutely no doubt that many medical men are maintaining a scale of living that is entirely false and utterly beyond their means. It "often happens that what might otherwise be saved or wisely invested in a good life insurance policy is ventured on the stock market with, of course, ultimate loss of money, and mental anguish which sometimes borders on insanity."

It seems that Dr. Harris was trying to make the "high class" physician realize his responsibilities to the middle and poorer class of patient who can and is perfectly willing to pay a moderate fee, but who is being driven to such substitutes as the Cornell Clinic and the Life Extension Institute because of private office fees which he cannot meet.

Something is said also about the "organized profession." It is just because we are so dreadfully *unorganized* that discussions of this sort are necessary. It is, of course, too bad, as we said in the beginning, that Dr. Harris' diatribe could not be kept esoteric. But now that it is out, why not try to do a little independent thinking? It is up to us all, high-class man and average man, to look upon the profession as a kind of priesthood in which there is great opportunity for doing good. Our duty to the public transcends all question of fee, and if we are willing to work hard, the volume of patients which we are capable of handling will usually take care of the much-lamented "overhead."

A Comedy of Infanticide.—If the French birth-rate continues to fall, it is not the fault of the Frenchwoman, at any rate, not the fault of the peasant, whose love for children and instinct for motherhood is as strong as ever. This was very well illustrated recently in an "infanticide" case which constitutes a charming and humorous tribute to peasant naïveté in France. It is a story which requires but a touch or two by the pen of a Maupassant to make it a perfect tale. Juliette Louise Gasse, seventeen years old, of Le Mans, France, a peasant girl of excellent reputation, about a year ago met and fell in love with a young soldier. The soldier was presently called to leave for the Ruhr, and Juliette was left alone, her romance interrupted. Her neighbors remarked how depressed she was and were sorry for her. Juliette began to neglect her work, to dream for hours at a stretch, and, what excited a keener interest, began to take on weight. Mischievous neighbors whispered things, and these whispers were given support by the young girl's enlarging waistline. Then one day, quite suddenly, Juliette appeared with her waistline magically reduced to its previous graceful proportions. Again there was whispering, this time more audible, so that the authori-

ties decided to take action. Juliette was called before the magistrate, and, after cross-examination, made a complete confession. She had given birth, she said, to a child on February 12, and she had buried it in her garden to hide her shame. The departed soldier, also of excellent reputation, was presumably the father.

On the strength of her confession, Juliette was held on a charge of infanticide. The authorities immediately began a search of the garden in which the child had been buried. The whole garden was dug up but no trace of the body was found. The authorities were puzzled, but, believing that the young mother had lied regarding the place in which she had buried her child, they again interrogated her. She insisted that its grave was in the garden. However, a suspicion began to enter the minds of the authorities and a physician was called in to lend his assistance in the quest of the truth. The physician made an examination of the girl, and reported that Juliette was as innocent as on the day she was born; that any love the young soldier may have had for her was utterly blameless; and that her story of having borne a child was pure invention. Juliette was thereupon again called before the magistrate and informed of the doctor's testimony. The girl thereupon made a complete avowal, admitting that her story was a fabrication from beginning to end. Amazed, the magistrate asked her why she had invented the tale. With delightful naïvté and blushing becomingly, the young girl declared that it was her heart's desire to have a baby, that she envied the women who had children, and that she wanted to acquire the honor of a motherhood, however fictitious, and even at the cost of her reputation. Asked how she had been able to simulate pregnancy and then suddenly recovered her slim figure, she said, laughing: "Oh, that was easy. I knew about the whispers of the neighbors and that gave me my opportunity. I merely stuffed my apron with rags, and then one day I removed them." And, when discharged, she regretted that her ruse had not succeeded!

Prohibition and Art.—There is, however, an element among the European critics of American prohibition which sees more than mere matter for jest in our dry régime. Such critics, pausing amidst the general

hilarity of their colleagues to examine our psychology more seriously, have come to the conclusion that the state of mind which produced the Eighteenth Amendment and subsequent interpretations of it is the very state of mind which is responsible for America's lagging behind so pitifully in the creative arts. Outside of the field of mechanical inventions and big business, according to these critics, the genius of America has revealed itself chiefly in a negative capacity—in the formulation of precepts of a restraining nature. It used to be said of Germany that the whole spirit of the country was dominated by the word "*Verboten*." Yet the word "Don't" occurs with even greater frequency not only in the public places of this country but in the majority of its laws. In a word, our European critics insist that, tho boasting about our liberties, our chief activity lies in the restraint of these liberties, that our laws are rather concerned with checking the individual than in accordinng him freedom. And they conclude that, in an atmosphere of such restraint, art cannot thrive. This is an interesting theory, by no means frivolously offered, and worthy of consideration. The truth is that, as a nation, we are in the adolescent stage of development, and even the most casual survey of our laws reveals the fact that we still adhere to principles of education which have long ago been rejected by progressive nations.

Modern educators have successfully demonstrated the mischief created by the education of children in a negative spirit. They have pointed out the harm done by saying, "Don't" to a child, without making clear to him the advantages of the affirmative and the penalties of the negative. They recommend that a parent say to a child: "Do this, because it will help you in such and such a way, whereas if you do the other thing it will hurt you in such and such a way." The word "*Verboten*" is struck from the vocabulary of adolescence as a destructive factor. But America, still admittedly in its adolescence, adheres to the old formula. Our lives are too restricted by negative admonitions and our laws are too generally conceived in a negative spirit. It is the Puritan heritage, left by the founders of the country, which its heirs have been unable to throw off despite the fact that conditions have altered since the Pilgrim Fathers fled from the excesses of Europe and isolated

themselves from contagion by restrictive measures which did credit to their homely virtues but which were hardly conducive of artistic creation. It is a notable fact that the era of Puritan prevalence in American history was one of the most barren, from a creative point of view, that the country has ever known. This would seem to sustain the thesis of our European critics, who insist that America can never emerge as an artistic nation until the Puritan psychology disappears. And the fact that we send our young artists and writers and musicians to Europe, where they seem to be able to develop their genius in an environment unhindered by the spirit of useless negation, would also seem a point in favor of the critics.

Pasteur Day.—It is a sad commentary on our civilization that a government may tax its citizens to the utmost for military needs without a grumble of protest, raise and spend millions annually to be consumed in smoke and the attendant tragedies of strife, and yet that same nation must appear before its citizens with hand outstretched, begging a few pennies for science. That is the depressing spectacle offered by Pasteur Day in France, the anniversary of that great savant being celebrated by an appeal for public contributions for the country's laboratories and scientists, both in a condition which would strike shame into the heart of a more obscure country. But, tho this spectacle is depressing enough in itself the results of the day are even more disheartening. The campaign for collections was well organized, not only in the large cities but in the smallest hamlets. In Paris and in the other big centers hundreds of volunteers were enlisted, many of them pretty girls whose charms were calculated to lure many a franc into the little tin boxes they rattled in the faces of pedestrians in the boulevards. Previously there had been a wide publicity campaign in the newspapers, not only informing the public of the needs of the dilapidated French laboratories and impoverished scientists, but awakening it to pride in the glory of France, Pasteur's country. The total results of the collection are not yet known, but the estimated collection in Paris has been announced: 500,000 francs, or about \$30,000. This absurd sum in the richest center of the country is an

affront to the reputation of France and of the French. It will scarcely pay the costs of the campaign in that area, and some pessimists bitterly remark that it will even leave the organizers in debt, so that the laboratories and scientists for whom the collection was meant are even worse off than before. It is to be presumed that the situation in other parts of the country is not much better, and the total result of the effort is worse than nil.

Pasteur Day constitutes a moral defeat for France which it will not easily survive. Ever since the Versailles Treaty, the French Government has been at great pains to convince a distrustful world that France is not a militaristic country, that its highest interests lie in culture, in art and science. Pasteur Day was hardly a convincing proof of this. At the time the public collection was being made and alms were being begged for the heirs of Pasteur, several campaigns were in progress for funds for the French troops occupying the Ruhr. The results of one of these campaigns alone surpassed that of Pasteur Day. During the war it was easy to persuade people not only to make generous gifts of money and jewels to be converted into instruments for the killing of human beings, but to sacrifice all that was dearest to them and reduce themselves almost to want. But in response to a more modest appeal in the effort to preserve life thru scientific progress, to add to the happiness and well-being of humanity, the French public failed utterly. Perhaps it is somewhat harsh to charge the French with a frailty which is, after all, common to all humans whatever their geographical situation. The failure of Pasteur Day is the failure not of France but of all contemporary civilization, and the misanthrope has one more good reason with which to sustain his pessimism. Perhaps, in the far future, society may be so reorganized that art, science and all the adornments of life, as well as the inherent necessities, will receive greater prominence among the obligations imposed on the public. Perhaps in that distant day the needs of science will be amply supplied by taxes imposed on the public, just as military budgets are now drawn up out of the pockets of the masses, whether they will it or not. And it should be said, in justice to humanity, that more often than not it will be relieved at the liberation from compulsory subscription to mutual slaughter. And, in this

reorganized society, military needs may be supplied thru a public appeal, the charity of the public. This reversal of the usual method now existing, revolutionary as it may seem, would be infinitely more consistent with the precepts of civilization and the advance of humanity.

The Decline of Liberty.—The fall of General Stamboulisky, the Bulgarian dictator, occurred very shortly after he had given evidence of a genius for settling domestic controversies which few modern statesmen have revealed. There is a strong and very audible Communist element in Bulgaria. This element has for some time been clamoring for a Soviet form of Government and the conservative element has likewise been loud in clamoring for the suppression, by force if necessary, of the radicals. General Stamboulisky, who is a philosopher as well as a dictator, decided that the best way to get rid of the Communist movement is to yield to it. He, therefore, decided that, in every community where there were at least ten Communists, the Soviet principles would be applied—but only to the Communists. These men and their families would have to surrender all their personal ownings, give up their earnings to the community, eat at a communal table—in a word, fulfil all the demands of the purest Communist philosophy. Any violation of these rules would, with true Soviet severity, be punishable by death. Stamboulisky's fall came too soon to have permitted a judgment of his genius as exemplified in this solution of a troublesome problem, but it is safe to predict that it would have worked out exactly as he expected: Communism would have weakened considerably and perhaps disappeared altogether from Bulgaria. Stamboulisky had the common sense to understand that Communism is not a vice but a form of aimless idealism which, like all idealism, becomes very wearisome as soon as it is converted into reality, and that the best way to cure it is to prescribe it. Signor Mussolini is getting all the credit for the sensational post-war discovery that, tho the masses are crying loud for liberty, it is the last thing in the world they really want. The Italian Premier has boldly said, on more than one occasion, that liberty is an old-fashioned ideal, that people insist on it but weary of it quickly if it is given them.

and what they really want is dictatorship, tyranny, autocracy. Dr. Nicholas Murray Butler is the latest to subscribe to this new vogue of anti-liberty philosophy. The success of the Soviet régime in Russia, the severest form of tyranny in history, is proof of the accuracy of the contention that the world has been moving in the wrong direction, that civilization should about face and march backward instead of progressing forward to a mistaken idealism to which the parrot-like public subscribes but really does not want. The Soviet in Russia is a far cry to the Communism which it set out to establish, and it has sunk to a form of unadorned tyranny which seems to accord well with the spinelessness of the masses. However, long before Mussolini and Butler made their discovery, Stamboulisky showed the way. That he was not far from right is well shown even in this country, where liberty is constantly declining, where repressive measures and repressive organizations are constantly on the wane, and where the Constitution is undergoing a gradual modification reducing the individual to a form of submission which the founders of the country would have characterized as slavery. The future of liberty is dark indeed.

The Doctor's Secretary.—In the midst of the vicissitudes and cares of a busy practice the physician is prone to delegate a great deal of work to others. This, however, sometimes works to a great disadvantage, even tho it be essential.

The general scheme of present-day practice includes an office nurse or secretary, or both, the double function residing in the same person or different persons, as the case may be. The secretary often becomes a sort of second mind, that is, she helps to remember what letters have been written, what patients have been seen, where certain things have been put away, etc. But since one seldom finds two minds working in the same direction, there is likely to be a conflict in methods, in accuracy, in memory for details, etc. The point is, do we, or do we not delegate too much to the secretary? We are all prone to shrink from routine or disagreeable tasks and are inclined to leave them to others.

One of the modern conveniences is a nuisance of the first order, namely, the telephone. If a physician decides to call

up another physician he asks his secretary to get Doctor So-and-So on the wire. This she proceeds to do, and gets into communication with a secretary on the other end. These two exchange amenities and after some delay the two doctors are put into communication with each other—perhaps. In other words, four people have been required to do what two might have done. It is difficult to understand how certain physicians ever manage to develop or to retain a practice, since they leave their entire destination in the hands of ignorant servants, who understand English poorly and are unwilling to make the effort to obtain accuracy. We have all had the experience of calling up a confrère and of hanging up in disgust because an ignorant foreigner on the other end either would not or could not understand who we were or what we wanted.

Many physicians are unfortunate enough to be elected secretary of one or more medical societies. That is either a sign of popularity or unpopularity, according to one's point of view; for, if one has an enemy he can scarcely do better than see to it that the enemy is elected secretary of something or other. In the preparation of society programs, and the recording of minutes and general details belonging to the secretary's work, most of us are prone to delegate too much to the office attendant. A physician submitted a synopsis of a paper which he wished to read before a certain medical society. The title was somewhat long and so was the synopsis. The secretary of the society, a physician of prominence, left the entire matter to his typist, and when the program was published the synopsis appeared without the title, to the great disgust of the reader of the paper. In another instance, a physician desiring to read a paper before a learned society, wrote a letter in which he submitted two titles, asking that one of them be chosen, the object being to afford an opportunity to make the program coherent, as the two titles were on widely different subjects and by choosing one of them, the desired effect might be obtained. With great magnanimity the office girl set down both titles, which were published in the program, to the great discomfiture of all concerned.

Letters which should be answered personally are too often turned over to the

"girl" with a few misunderstood remarks misinterpreted. We all know the results.

If such things are irritating to other physicians, what must be the effect upon patients? Of course, there are certain necessary limitations. The doctor cannot and must not be a slave to his patients, or he will encourage disrespect and dissatisfaction, but all the essentials of the management of a case should come from the doctor's lips direct to the patient. Here is a case in point: A man was to receive radium treatment for an enlarged prostate. He called up the specialist, but could not get in touch with him, so that the telephone conversation had to be carried on with an attendant or nurse. No satisfactory information could be obtained. The attendant did not know anything about the case, the time of the appointment, the length of the duration of the treatment, or the time required to be away from business and family. The patient hung up in disgust. Thinking the matter over, he called again twenty minutes later, demanded correct information from the physician and got it. The order was that he was to stay over night in a hospital, necessitating arrangements with his family to pack an overnight bag, arrangements of certain business matters, etc., all of which were of extreme importance to the patient; but, had he not persisted, the whole matter would have been confused and much annoyance would have resulted.

The truth is, that many of us have no fondness for hard work, and routine is distinctly distasteful to us. For example, the roentgenologist has a technician to take pictures. His secretary attends to most of the correspondence, while the doctor plays golf or "sits in" at a game of poker at his club. The doctor thinks he has done his duty if he "interprets" the picture and holds an occasional conversation with the patient or the doctor to whom he sends the patient.

But matters of even greater importance are often involved, even to the extent of the life and health of the patient. How often, for instance, is the cervix torn because the progress of labor is left to the judgment of a nurse? Where the nurse fails because of institutionalism or utter disregard for the patient's welfare, chronic invalidism may result.

If we are unwilling to pay the price of success thru hard work, which usually means disagreeable details, we ought not

to complain about hard times. There are certain things which we must do personally—prepare our own solutions, for instance, if the same is not done by a chemist or pharmacist. This is essentially true where intravenous or hypodermic medication is to be carried out, such as the administration of cocaine, salvarsan, etc. We must read the labels on all bottles and not take it for granted that someone has handed us the bottle we asked for. If one does not do this, who can we blame but ourselves if carbolic acid is dropped into the eyes of a new-born babe instead of silver? Could we ever be forgiven for such an oversight as that?

If sudden death occurs from local anesthesia, one must prove to his own satisfaction that the solution was properly prepared and injected. Many of us ought to have a heart-to-heart talk with ourselves. We need to stimulate our consciences and make it a rule of life that no service to a patient is too menial or too humble if we can thereby relieve pain or effect a cure. The great Master of us all washed his disciples' feet as a sign of humility. In our turn we must not be afraid of losing caste in the patient's eyes from performing any necessary service. One of the faults of the world today is that there is too much luxury and not enough willingness to do hard tasks which confront us. Is it any wonder that many of us are spoiled by the soft places into which we have fallen?

We need to keep in mind the ideals of the old country doctor, to whom neither wind nor weather, muddy roads or impassable traffic conditions meant failure. He was always ready at the beck and call of humanity. He had no assistant, and even the word "secretary" was quite unknown to him, but he accomplished great good for his day and generation, and thousands who stop to think of their indebtedness must pay tribute to him.

The Doctor's Automobile.—In our August issue we shall inaugurate a new department to be called The Doctor's Automobile, in which we will give not only practical hints and suggestions pertaining to the care of the cars driven by physicians, but also special information in regard to different makes of automobiles and their serviceability for professional use. Some

cars are particularly fitted to meet the exacting demands of medical men, while others are quite the reverse, and have defects or disadvantages which should lead practitioners of medicine to shun them carefully. For example, there are makes of closed cars that under certain conditions allow the gases from the exhaust to escape into the car, and as these gases largely consist of the highly dangerous carbon monoxide, the advantage of knowing these facts can readily be seen. Then again, there are automobile firms, presumably reliable, who make all manner of claims concerning the mileage per gallon of gas, oil consumption and so on, but when these guarantees are not fulfilled, the firms referred to do not care enough for their reputations to make their cars right and capable of rendering the service claimed for them. The buyer is left with a faulty and unsatisfactory car on his hands, and often suffers a very considerable loss.

It is our purpose to conduct this new department with especial regard to the needs of practicing physicians, to aid them in every way possible, and incidentally to protect them as much as we can from unscrupulous and unreliable manufacturers. The department will be in charge of an expert and our readers may feel at liberty to write in for any information or advice they may desire, with every confidence that their inquiries will be given the most careful and painstaking attention.

RUTS.

The world is full o' ruts, my boy,
Some shaller and some deep;
An' every rut is full of folks as
High as they can heap.

Each one that's growlin' in th' ditch
Is growlin' at his fate,
An' wishin' he had got his chance
Before it was too late.

They lay it all on some one else, or
Say 'twas just their luck—
They never once consider that 'twas
Caused by lack o' pluck.

But here's the word o' one that's lived
Clean through, from soup to nuts:
The Lord don't send no derricks round
T' hist folks out o' ruts.

—*The Hospital Buyer.*



EMPIRICISM AND PROFESSIONAL INDOLENCE IN MEDICINE—A CRITIQUE.¹

BY

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It would be difficult indeed to encounter any important phase of life which does not bear the earmarks of custom and tradition, and curiously enough these factors have been as persistent as they have proven detrimental to progress for the human race. Choosing an example outside of our own profession, one need but take a glimpse at the field of education. It is only within recent years that modern educators have been severing the traditional links which have kept progress in that realm chained to antique customs based upon hero worship of the past, or what may well be termed, educational chauvinism; and which has burdened teacher, pupil and community alike with trite and useless facts which have functionated very much in the rôle of cobwebs bordering the cranial contents, leaving it to the graduate to obtain his real utilitarian knowledge from other sources—in fact all professions are changing their methods in the paths of service and utility. All around us we may observe evidences of an intense desire to drop that which is not

strictly of material worth for the things that will give what the times and masses require and demand—in other words the empiric is giving way to the rational.

This may sound like mere generalizing; if so, then we hasten to add that medicine today is seriously in need of generalized comparisons with other activities, so that the inner consciousness of the medical profession may be thereby awakened to a realization that while other pursuits are gliding steadily ahead, it is an unfortunate but true fact that a great part of the medical profession is today hovering around the lines of least resistance, thereby increasing the distance between ourselves as a profession and the goal of rational achievement. It will be the object of this paper to designate a few of the evident shortcomings of today which savor so strongly of empiricism and insouciance, that they are continually affording loop holes to the antagonists of the regular profession. To those who will analyze the status of medicine in America, and who will not emulate the tactics of the ostrich which buries its head in the sand when it scents danger, it must be increasingly evident that medicine is losing its prestige as a profession. In the following lines, an earnest attempt has been made by the writer to present his criticisms in a constructive manner.

The first item which presents itself for our consideration is one that has been the

¹ Read before a meeting of the St. Louis Medical Society.

bane of the regular profession, and not due particularly to the faults solely of physicians themselves, but involving many factors which it is not the purpose of this essay to analyze, since the writer has presented those matters in a paper before the St. Louis Medical Society on November 25, 1919. (See *Missouri State Medical Journal*, March, 1920.) The present paper may be said to deal with the effects, while the one above mentioned was concerned with the cause. Let us commence with what may well be termed indiscriminate prescribing, and consider the custom of prescribing "tonics", which, as we will attempt to show, are in most instances not tonics at all but mere whips to the circulatory, muscular and nervous systems, and on even a cursory analysis can be termed naught but pharmacologic incongruities and physiologic inconsistencies, when judged from the motive behind the usual method of administration.

A concurrent definition of the term *tonic* seems to be that it is an agent producing normal tone of an organ or part. Is it not strange indeed then to cogitate upon the numerous perpetrations which are committed upon the human economy in the name of a "tonic"? It must be evident to anyone considering this phase of prescribing that the traditional time accepted by both laity and physician as requiring one of these godlessly conceived shotgun mixtures, is just after an illness, when Nature is usually craving to be let alone and to make her own adjustments. It should be easily deductible in the light of modern knowledge, that the acme of resistance power to disease is reached in the human economy when the physiologic processes are proceeding in a normal manner in the usually accepted sense of the term. Does it not therefore follow as an obvious corollary, that, as soon

as we begin giving the system stimulants of any sort, we run a great risk of upsetting the balance of resistance and eventually producing more harm than good? This objection seems also a plausible one to utilize when arguing that coffee, tea and alcoholic liquors be regarded as not necessary in the daily régime of the healthy individual.

There seems to be no limit to the lack of respect which certain pharmaceutical manufacturers manifest in their assumption of the average physician's ignorance of pharmacology and physiology. If anyone doubts this statement, then let him for a brief moment conjure up the vision of thousands of blotters, pamphlets, circulars and samples of so-called tonics, all heralded in the finest and most alluring descriptive English, by men who in most instances are paid for their ability in advertising and as press agents. Fortunately the American Medical Association assisted by the Federal Government is quietly but effectively putting a quietus to exaggerated claims; but it must be left to the medical profession themselves to discriminate between preparations logically compounded from the viewpoint of service, and mere mercenary mixtures made to sell at any cost.

Let us now consider a concrete example. By far too many tonic mixtures contain iron. As the medical profession is well aware, the amount of iron which is actually absorbed is a negligible factor; and yet how often are we greeted at our desks and from salesmen by word of mouth, with the preposterous statements that the large proportion of iron in their preparation has been so treated as to be made entirely absorbable. Many iron mixtures and other tonics contain arsenic. The history of arsenic eating does seem to show that obviously at least a tonic effect is produced, but only of a tem-

porary sort; and just how, by what means, and thru what particular channels, seems to remain a closed book. What we do know definitely, is that arsenic seemingly reduces thyroid activity and is a depressant to the circulatory and nervous systems, which makes it a valuable agent in conditions like chorea and allied affections with increased nerve activity. A favorite tonic mixture of today is one containing iron, arsenic and strychnine, with a small proportion of manganese. From the chemical and pharmaceutical viewpoints this is an irrational combination, because, arsenic and its salts do not stay well in solution in presence of iron or strychnine and their salts. Secondly as mentioned above, arsenic is essentially a depressant, while it need hardly be stated that strychnine is a motor and circulatory stimulant, and if any physician with skeptic tendencies doubts the poor absorability of iron, he need only examine the feces of a patient taking that drug. It is quite possible that many a physician like the writer after prescribing iron has had the inadvertent experience of being called out by an alarmed patient, on a cold night, with the statement that the stools were full of "blood". One desiring to be cynical anent this illustration might poetize to the effect that in the case of the patient, "the iron entered the bowl", but in the instance of the physician, "the iron entered the soul".

A singular phase of the Government's attitude toward arsenic consumption is manifested, when they permit arsenic wafers to be sold over the counter in a drug store to anyone who cares to purchase them as a skin beautifier, but will prosecute an individual who puts arsenic into the food of a rich relative, over a long period of time, with the object of inheriting the latter's wealth prematurely. Since arsenic

reduces thyroid activity, and since the thyroid is so intimately wound up with the metabolic processes of normality, it should certainly not be sold or prescribed indiscriminately. Besides, why stimulate with strychnine, a circulation that in many infections, after which it is customarily prescribed, has been already overworked to the point of yielding the victory? And yet it is extremely doubtful if one could safely throw a basketball at the shelves of a modern drug store, near the prescription counter, without striking a bottle of pills, extract, tincture, or tonic mixture containing nux vomica, or its alkaloid strychnine in some form.

Another favorite *tonic* of today is the Elixir Glycerophosphates of iron, quinine, manganese, strychnine, sodium and calcium, made without sugar so that the unfortunate diabetic need not be ostracized from the "advantages" of this wondrous concoction. We recall distinctly, and no doubt other physicians will likewise remember the suggestion by one large pharmaceutical house in this country, that this elixir in spite of its shot-gun character will make an excellent vehicle for the iodides. Speaking of iodides, reminds one that to comment on the abuse of these salts as a tonic and alterative, would, to use a slang expression, be "like taking candy away from a baby", so we pass it by. Incidentally, has anyone discovered just what is meant, when a proprietary firm or other source of voluntary information, makes the statement that a drug is an excellent alterative? We confess that this is one of the many things in the universe of which we are densely unsophisticated. Perhaps the new theory of relativity will solve this problem. German clinicians have at least the advantage over us here in America, by virtue of their candidness, for they frankly

avow that "*ven men twist nicht vas zu tuhn, den gebt men kalium iodun*", translated, reads: "When you know not what to do, then give potassium iodide." With one more example we shall leave the field of tonics. The various elixirs and syrups of hypophosphites have a great vogue in the medical profession. This is presumably due to their phosphorous yielding content, just as the above-mentioned glycerophosphates are popular because the phosphorus in the nervous system occurs in the form of glycero-phosphoric acid. Anyone who does not believe that the hypophosphites pass out of the system unchanged without any perceptible physiologic action need but look up the researches of Paquelin, Joly and Boddaert (see Wood's Therapeutics) to be convinced; or better still, we suggest that anyone having a marked inclination for sweets, be given a pint bottle of syrup of hypophosphites without the nux vomica, and there is no doubt but what another pint will be called for shortly after. If we were asked the reason for our pointed criticisms anent the empiric dependency upon tonics, we should answer in all candor, "it is because by dilly-dallying with such things as 'tonics' particularly in nervous conditions requiring mainly hygienic and alleviating measures, that the medical profession is slowly but surely bartering the privilege of its birthright, for a 'mess of pottage' into the hands of crafty and shrewd fakirs of all sorts." We could of course go on citing other glaring instances, such as the use and abuse of drugs like digitalis, strophanthus, cactus grandiflorus and others, merely on the pretext that they are heart tonics and thereby are of benefit in numerous conditions, but time and relevancy do not permit, so we pass to the great field of cathartics.

It is a tribute indeed to the Supreme In-

telligence, that in awarding a laboratory to the human economy in the shape of our intestines, we have been endowed with an organ which seems to recognize no limit when it comes to receiving punishment. In nearly all branches of therapeutics, there seems to be some sort of designated boundary which confines the agencies employed, but in the case of cathartics or intestinal stimulants, as we shall term them for convenience's sake, there appears no suspicion of limitation to the number of therapeutic measures, drugs, or combinations of drugs which the resourcefulness of Nature aided by the manufacturing pharmacist has been continually providing without any apparent cessation for the future. The ideal laxative is of course one that will cleanse the intestinal tract without weakening the tone, and will on the contrary produce a lasting tendency for normal peristalsis. Cascara Sagrada has enjoyed a great popularity in this regard, but it is quite safe to assert that the profession in general is beginning to realize that an intestinal stimulant with continued tonic effect does not exist, or at least it has not as yet been discovered. The corollary is of course obvious, and resolves itself to treating the various manifestations of constipation and allied atonic conditions of the intestinal tract, with proper dieting and abdominal exercises aided by other hygienic measures. In a general way it may be stated that in the infectious diseases requiring an eliminant and stimulant of the emunctories, calomel in broken dosage, unless contraindicated for some reason, is the agent of choice for adults and grown children, while for small children and infants, phenolphthalein is a suitable laxative. A saline laxative is very useful after calomel, mainly for the reason of serving to dilute acrid and decomposed bile, and hastening

its exit from the lower bowels. To even commence commenting on other agents used singly or in combination as cathartics, purgatives and laxatives, would keep you here into the wee small hours of the morning, so we leave this class of therapy with the humble injunction that the ancient soap water enema should not be ostracized on account of its non-esthetic involvement. As far as the laity is concerned, one might pertinently paraphrase Tennyson's "Brook", to the tune: "Reason may come and reason may go, but the bowels be purged forever."

On leaving the abdomen and entering the chest, one finds much cause for complaint anent the carelessness which is manifested in prescribing the class of drugs known as expectorants. It must be admitted that a cough when treated as a mere symptom is no easy thing to allay ordinarily; however, it must also be conceded that the average prescriber takes little time or trouble to determine whence this distressing symptom eventuates; hence it is that we have today cough syrups and expectorants without any rational attempt to consider a halt. There is probably no specialty in medicine extant today that could not cite to us numerous ailments in their realm of the human economy, which have a cough as a concomitant symptom to other conditions, and yet, the examination of literature from pharmaceutical houses will disclose the fact that their particular expectorant may be relied upon to cure any and all coughs, presumably under the assumption that the origin of the cough makes little or no difference; and the flourishing condition of these manufacturers is a certain enough sign that physicians are swallowing such tempting bait. One of the great errors which is committed daily in prescribing for a cough, is the lack of cognizance which is taken by many, of

the fact that a cough may be of the so-called, "dry" sort or it may be accompanied with copious discharge. In the former case the object is ostensibly at least to produce a flow of bronchial secretion. This is ordinarily best accomplished by the administration of ammonium chloride in combination with sodium salicylate or benzoate. Ipecac and squill assist greatly in loosening up bronchial secretion. It is hardly ever essential to go outside of simple drugs such as those mentioned, when one knows how to prescribe.

In the case of the "moist" cough, the object is naturally to lessen the secretions. This is ordinarily well controlled by the use of either narcotics such as heroin, morphine or codein; or what is infinitely better, is the employment of hyoscyamus in the form of tincture, mixed with Syrup of Tolu, or narcotics and hyoscyamus may be beneficially combined in some instances. The mistake that is usually made—and this statement can be easily proven by examining the Rx files of any busy drug store—is that ammonium chloride is given with the morphine group, which is not only a physiologic incompatibility, but is a dangerous practice, for the alkaloids are precipitated out in such a mixture, and many cases of morphine, heroin and codein poisoning have been quoted in the literature as resulting thru the failure of placing a "shake well" label on the bottle.

We desire next to consider the subject of antiseptics. There is some reason for the laity rushing for the usual bottle of hydrogen peroxide in case of some surgical injury, on the assumption of some form of hysteria, but it is difficult to understand why (and the writer has formerly been guilty of this practice himself) physicians deem it necessary to apply strong antiseptics to each and every surgical condition where

one can possibly be utilized. It must not be forgotten that any substance which is strong enough to destroy pathogenic bacteria will also kill living tissue cells of the capillaries and surrounding tissues. In the region of the nose and throat, the writer has come to the conclusion that the general use of antiseptic oils except for very special conditions is a fallacy. The natural mucous secretion is the best germicide, and isotonic salt solution the most logical wash. The custom of using sprays of Dobell's solution and other antiseptic mixtures is without rational excuse, except in selected cases. During the "flu" epidemic no one was able to prove definitely to our knowledge that the gauze mask saturated with antiseptic solution did any tangible good; and it may be easily surmised that it was an untoward measure. In this category may also be placed the indiscriminate application of ointments to the injured tissues in various parts of the body. Few, if any, ointments on the market are sterile, and if they have any militancy about them, outside of the palliative phase, then they may be counted upon to become good culture media for bacteria and fungi. The prescribing of expensive liniment mixtures containing the volatile oils such as wintergreen and sassafras is seldom called for. Simple mixtures such as commercial olive oil and turpentine with a little chloroform answer the purpose, which in most instances requires mainly the friction.

An essay of comprehensive scope would necessarily have to embrace the promiscuous phases which are being evidenced with digestants, internal secretions, biologicals, fads and fancies of many sorts. We could also cite instances of extreme neglect as in the case of atropin, a valuable drug as a relaxant in certain spasmodic conditions, which are usually swamped with coal-tar

products of foreign make. The coal-tars in medicine serve to illustrate in a glaring manner the ease with which the American physician has been exploited by the European manufacturer. We have dozens of coal-tars where one should suffice, but the sacred name of the foreign trade-mark has been sufficiently potent to gain entry into the confidence of American medical men. Next to cathartics rank sedatives in the practice of promiscuity. Like the princess in the fable, who asks her pauper lover for bread, and is kissed to sleep, that her hunger may not be felt, so the empiricist obtunds the active symptoms of infection or other fulminating conditions with sedatives.

With the above then, we trust that there has at least been conveyed a suspicion that all is not as it should be in medicine. One could point out several mal results hinging on the above-mentioned conditions. The newly graduated M. D. gazes in bewilderment at the field of medicine and rushes into a specialty, as the lesser evil. The result is, we have specialists of all tempers and calibres galore, and since the fields are limited in variety, we may no doubt look for an extension in this regard, by an early inclusion of the umbilicus as a new specialization. One often hears the excuse offered by medical men that the laity insist on being saturated with prescriptions. There is no gainsaying this fact, for no doubt every physician in his early years of practice has had the experience of seeing a surprised patient, when it was attempted to charge for a visit where no prescription was deemed necessary, and herein lies one of the failures of the past, for there is little evidence that the profession is making any concerted effort to enlighten the public in that regard even today. Have we not in fact been rather behind the times in the

tense conservatism which we have maintained toward the public to our evident disadvantage? Has this in reality been mere conservatism or is it just unadorned professional indolence? Why is it that right here in our own city of St. Louis, our great seat of medical learning does not disdain to meet the public on its own ground, by talking hygiene and preventive medicine?

What are we doing as an organized profession today to advance our own interests, while a gullible public plays into the hands of correspondence course quacks and fakirs of increasing numbers? Among ourselves we go about symbolically beating our breasts as martyrs who are sacrificing their source of income for the common weal by assisting the great movements of public health, whereas at the same time, sordid hypocrites are filling the lobby chambers of our legislative halls, at which we sit by quietly until some bill which is scandalously detrimental to our profession is engrossed, then we make a wild rush to the capitol and barely have their nefarious measure defeated—sometimes.

What are we doing as an organization to manifest an interest in the public health matters in our midst? How many of us have the slightest idea of the aims and accomplishments of our Boards of Health? What have our Public Health and Instruction Committees ever been instructed to do by way of linking our interests with those of the state and national public health movements? What are we doing to interest physicians in the great industrial medicine era that is coming slowly but surely upon us? In November, 1920, the writer had the privileged honor of representing the American Medical and Missouri State Medical Associations at the State Teachers' Convention in Kansas City. The President

of the latter organization was so surprised that a physician was coming to address the teachers, that it required eight weeks of determined correspondence, with no little pressure on the side, before a place was granted on the program. It is no slur upon our Committees on Health and Public Instruction that they have not as a rule been active. They have simply not been expected to do anything except in a crisis, and have lived up to these expectations. Editorials in medical journals, including our own state journal, are constantly warning that a status of the socialization of medicine is logically not far off, if we maintain our present nonchalant attitude toward the progress of events around and about us. Until the above questions can be answered satisfactorily, we are constrained to indulge in the assumption that the influence of medicine in the large sense is losing ground, and that our organizations are not fulfilling all the purposes for which they should be continually striving.

In conclusion then, from the foregoing statements, our duty is obviously delineated by the status of present-day events. In the first place, just as our Government does not issue a patent on any article that does not show an improvement of some like and previously patented thing, so should the medical profession of America take a determined stand in refusing cognizance to any new drug or combination of drugs, to any chemical or mixture that does not present a tangible and serviceable improvement of any preceding drug, chemical or mixture which it seeks to replace; and when any such substance has been officially recognized then the preceding ones should be dropped, thereby avoiding unnecessary confusion. Let us consider a concrete example. In the case of proprietary hyp-

notics, among others, we have chloral, sulphonal, medicinal, trional, tetronal, luminal, allonal, and veronal (the latter having been changed by order of the Federal Trade Commission to barbital). There is no definite necessity for burdening the physician with such conglomerations of analogues which exist all thru the coal-tar series, and which are limited in some instances only by the scope of the alphabet. Let physicians call a halt to the exploitation of their gullibility, which has been going on for the past three decades and adopt simplicity and service as the byword in therapeutic rationale. There is little excuse today for making many errors in diagnosis. Here in St. Louis for example, we have distinguished minds in all the definite special sections of medicine and surgery. We can boast of efficient laboratories to make any necessary metabolic, chemical, biologic or allied examinations which are essential to reveal the correct diagnosis. Our hospitals rank second to none in the country for efficiency. So much for the cure of empiricism. As for professional indolence, the remedy is easily within our grasp.

The first task that must be undertaken is to restore the profession to the confidence which it is fast ceding to other and questionable endeavors. The method resolves itself into the panacea that is proving a world-wide mediator wherever such difficulties are being encountered—we refer of course to *education*. Take for example the age old problem of the venereal peril, which the church has failed in solving, in a most woeful manner; it is being combated at present in an effective way by publicity and education. We have got to loosen the robe of professional stoicism which we have wound around all of our endeavors without ever taking the public into our confidence. Stoic-

cism is permissible to a certain extent, but as soon as it is proven a barrier to a profession's progress, then it must be abandoned for other attitudes. Surely we have nothing to hide or be ashamed of in our profession; then why the intractable silence, which is broken only now and then thru the editorial columns of our medical journals. Is it possible that we have broadly misconstrued the meanings and limitations of the word "ethics"? We surmise that if the broader attitude were adopted by our profession, we would undoubtedly be more successful in the business end of our vocation, without, at the same time having to sacrifice any of the higher ideals which have characterized our profession as the one in closest touch with the plans of the Supreme Intellect.

In offering the suggestion of militant plans for educating the public, I am constrained in all fairness to qualify my statements with the assertion that all physicians who seem lethargic about the progress of medicine are not necessarily indolent, but adopt that attitude thru what they believe to be a definite and logical line of reasoning. There are many physicians who have always believed that it is not the place of the medical profession to educate the public against drugless healers and others of the like. In a comprehensive article embracing this topic, Dr. F. R. Green, of Chicago, at a recent convention of the A. M. A. states: "Of late years, I have doubted whether the intuition of the medical profession is not wiser after all than the views of those self-sacrificing and enthusiastic physicians who have been the leaders in these battles", and further on, he writes: "The protection of the public against 'incompetent practitioners' is a public function. If the public

want to be protected, they should pay the expense of such protection."

The events concerning the medical practice act which have transpired recently in Missouri thru the antagonistic action of the Governor bid fair to decide for Missouri physicians, which of the above methods of procedure is the most logical. Physicians have in all ages been characteristically individualistic in their trend of opinion particularly where the weal of the profession has been concerned. It seems rational, however, to assume that this very lack of cohesion has been a great factor in lessening the confidence of the public toward the regular profession. Is it not time then, that a definite and concerted decision be reached and consistently followed for the future? Are we to continue as in the past, leaving the work of protecting our interests to the few while the rest of the profession are content to smile encouragingly—some, not even condescending that much, or are we to present a united front emboldened by the spirit of justice and a desire to convince the public that our sole aim in adopting any measures at all is prompted by the ideals of square dealing and professional honor?

One of the blatant and specious arguments advanced by the foes of reputable medical schools in Missouri, has been that they are eliminating the country practitioner. This, aside from insulting the mentality of our country folk, is manifestly unfair to the faithful and hard-working country physician. We suspect that it is the dog's life which the medical man is called upon to lead in the small towns that is causing him to hasten away from communities where a physician's pay is considered a sort of charitable donation and where respite from duty is a very unusual occurrence.

Several states are now revising their constitutions. There has been a good deal of bluffing going on in legislative matters concerning medical practice acts in nearly every state of the Union by the foes of the regular profession. It were well indeed if the rest of the country would take to heart the bitter pill which the organized profession of Missouri has had to swallow recently, when that state was virtually thrown open to any one who could show a diploma from a "medical school". Our attitude of *laissez faire* has proven a fertile field for those who are seeking short cuts to the practice of medicine. It is pertinent to note that at the recent convention of the A. M. A. held in St. Louis, a committee was appointed to look into the details of the different cults who are virtually practicing medicine without a license. Let us hope that this decidedly constructive move will be followed up with result-getting activities which will strengthen the traditional link between the regular physician and the mentally sound public.

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Pyelography.—Wesson, in his interesting article in the *California State Journal of Medicine* (May, 1923), reaches the following deductions:

For years it has been taught that the most dangerous person in medicine is the "man with a curette," but he is harmless compared to the "amateur with a cystoscope." Pyelography is ordinarily a simple maneuver. The untoward results are due to a variety of causes, chief of which are: (1) passage of a cystoscope in a very old, debilitated patient, (2) ureteral spasms and complete suppression of urine due to the trauma of passing the catheters, (3) use of toxic shadowgraph fluids, and (4) over-injection.

HAY FEVER A CURABLE DISEASE; A FURTHER REPORT ON A SUCCES- SFUL METHOD OF TREAT- MENT.

BY

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About two years ago, the writer submitted a preliminary report on a successful method of treating hay fever. As I know of no such pretentious claims ever having previously been made, I expected my assertions would be received with much skepticism. However, the experiences of the past two years have more than confirmed the statements, and conclusions advanced.

In my original paper, ninety-three per cent. of the cases treated were reported as favorable. In the subsequent series of cases, totaling now over one hundred and fifty, the results have been slightly better, in the sense mainly that a greater number of new cases have passed thru the season with complete freedom from all symptoms.

This improvement was to be expected, as I have availed myself of any measures which I felt would be helpful, while in the first series I depended almost entirely upon the one line of effort upon which I am satisfied the successful treatment and cure of hay fever depends.

Of the many cases successfully treated during the past four years, comparatively few have returned for further treatment. Of the remainder, I have either seen or heard from a large percentage and have learned that the benefits received have almost invariably persisted and no further treatment has been required.

Before expatiating further as to the treatment, I would like to present a few case histories of unusual interest, with comments on the same, as they have a direct

bearing on the conclusions I have formed.

Case 1.—Mrs. J. M. H. Treated first in 1920. Reported as Case 10 in my original report. Results as reported were very satisfactory and patient was able to remain in the city with slight discomfort only, for the first time in over thirty years.

The interesting fact in connection with history of this case is, that patient has required some treatment each season in order to be free from symptoms. This patient suffers from chronic colitis and adhesions of many years standing which has not yielded to any treatment, and probably accounts for lack of the complete success attendant upon a large percentage of cases. I am still hopeful that further improvement in tonsil drainage with continued general and nasal improvement will overcome completely the trouble.

Case 2.—Mrs. D. W. S. Aet. 44. Consulted April 3. Rose cold, hay fever and asthma since 12 years of age. Suffers severely; can never remain in city and invariably suffers from asthma on return to city in fall. Chronic ethmoiditis on right side with purulent secretion. Patient refused to consider any further operative measures for this condition.

Fortunately, tonsils have not been removed. Treatment was given, at intervals, every second or third day to a week, until the season was over. No rose cold developed. August 16, 1922, reported very little trouble. August 19 reported very well, but considerable trouble the day before. August 22 suffered quite badly. On August 27 and 28 very little sneezing, but nose running considerably, eyes troublesome but comfortable this morning. September 6, 1922, very little trouble since last treatment, and patient continued well. For the first time in many years, no asthma developed at all. The only condition in this case preventing complete success is, I believe, the existence of the ethmoiditis. This is clearing up decidedly and I expect further improvement, if not complete success, the coming year.

Case 3.—Miss M. C. C. Aet. 16 years. First consulted me in June, 1920. Had suffered from rose cold for several years. Tonsils had been removed several years previously. Gave usual treatment and case responded quickly to treatment that year.

Did not see patient during 1921. Consulted me on June 3, 1922; stated she was now living in Ann Arbor and had taken injections the year previously at Ann Arbor, but the treatment has made her quite ill for some weeks and decided to take more treatments from me. Patient was quickly relieved from all symptoms, but continued treatment bi-weekly during June and July. The interesting point in connection with this case is the fact that while success was eminently satisfactory in 1920, it did not persist. The success of treatment in cases of this kind depends mainly on thoro work thru the lymphatic ring, especially the tonsillar spaces. However, the permanency of results obtained is apparently much less frequent than those in whom the tonsils have not been removed. I have noticed this fact in other cases.

Case 4.—Aet. 50. Suffered severely from hay fever for many years past, often preceded by rose cold. Nasal conditions fair, with exception of bony exostosis of vomer on left side causing slight pressure of the inferior turbinate bone.

The tonsils fortunately are present, altho would be ordinarily considered infected. Patient was treated twice weekly during May and June—then, about once a week, during July and August. Patient received only three treatments during August and September. Treatment consisted of usual sprays to the nose, removal of spur of vomer, ultra-violet ray to mucus membrane, and treatment of tonsils. Tests made by insufflation of pollen powder 25 per cent. and also skin tests (in July) were negative and therefore had every reason to expect satisfactory results. No rose cold, nor hay fever developed at all. In this case, patient in writing me later, expressing his gratitude for the complete success of his treatment, stated that in years previously, he had been in many parts of the United States and Europe, but had never before experienced any relief except in mid-ocean.

Case 5.—Aet. 28. Hay fever past 15 years, beginning August 19 and lasting until about September 15. Consulted me August 3. Treated patient at intervals of three to seven days. Only treatment was usual sprays, cauterizing of inferior turbinates on both sides and thoro tonsillar treatment. No hay fever developed at all.

This patient had in all 10 treatments pre-

vious to the usual time of onset of the disease and with the case reported above, illustrates the satisfactory results obtained in the great majority of patients. As the condition responsible for the hay fever has been eliminated these cases have every prospect of complete immunity for the future.

Case 6.—Mrs. McL. Aet. 29. Consulted me January 25, 1923. Had suffered severely from hay fever for many years past, followed by asthma and much prostration. General nasal conditions good, with exception of an exostosis of vomer on left side posteriorly pressing against the inferior turbinate. Tonsils present and in condition which would ordinarily be called infected.

Treatment given consisted of removal of the spur and proper attention to tonsils, cauterization of turbinated, usual sprays and ultra-violet ray. After three weeks, patient sneezed two or three times after insufflation of powder consisting of 25 per cent. of ragweed in cornstarch and was permitted to leave for home.

This case illustrates the advantage of these methods of treatment, which in addition to being curative can be given at any time of the year, and the progress or success of treatment determined by use of pollen insufflation. Skin test would show same negative reaction if used. I realize there is a slight possibility of error arising from the slight chance of ragweed not being the exciting cause. However, one can be quite assured of effective results with proper treatment irrespective of tests.

The history of these cases suggests the general plan followed in my treatment. In my original paper, I drew attention to the possibilities of successful treatment in the following words:

"I have not had recourse to the use of pollen extracts at all but have attempted to de-toxicate the patient as completely as possible. While this is impossible to accomplish completely it can be attained for practical purposes. To be successful, it is

necessary that the nasal and tonsillar regions receive special attention. As yet, I have given little attention to the accessory sinuses, the teeth, the gastro-intestinal tract or other sources of infection. I feel that these parts could always receive attention to advantage and in occasional cases will absolutely require treatment."

My subsequent experience has fully justified the above statements and proved their accuracy. Apparently, however, the curability of hay fever by such methods, or any other, has not been grasped by the profession, as I have seen nothing offered as yet to support these views. I realize that the treatment outlined was rather indefinite. In order to be more specific at the present time, I will state that the successful treatment and cure of hay fever depends mainly upon the presence of tonsils, the recognition of their importance in the human economy and proper methods of treatment to restore their rôle or function.

This function of the tonsils is apparently to eliminate toxins from the system, probably directly from the respiratory tract and so indirectly from other sources of infection. Some observers believe they have an endocrine function. Whether they have or not, they probably frequently play as important a rôle by eliminating toxins which in turn, I believe, are the cause of the affections of the ductless glands. The systemic conditions which can be cleared up by proper tonsillar attention are often strikingly similar to those which respond to appropriate glandular extracts. In treating tonsils, I depend mainly upon methods of firm expression, repeated slitting of diseased areas if necessary, and of methods of establishing permanent drainage from such areas; local applications, and use of ultra-violet ray. Of these measures I consider

firm expression probably the most important, and lack of appreciation of this fact to be responsible for non-recognition of the possibilities of throat treatment. (The instruments I use for this work have been made for me by Habermas Surgical Co., Detroit, Mich.) Many able specialists in hay fever minimize the importance of nasal surgery. This view I disagree with emphatically. Badly deviated septums should be straightened, polypoid growths removed, and diseased accessory sinuses cleared up if possible. I do not believe in unnecessary destruction of the turbinates, altho when hypertrophied they must be reduced. In this condition, it is interesting to observe how congested swollen turbinates and tightly blocked nares, often immediately become free after thoro treatment of the tonsils.

The individual operator will follow his own method in overcoming these conditions. Many such cases will receive decided benefit from a cautery application to the same.

Conservative surgery with proper tonsillar attention and the use of the ultra-violet ray will also cure many cases of chronic sinus trouble in addition to preventing such a development in acute cases.

Any unsuspected hyperplasia of the nasal mucus membrane which might be harboring toxins, will be remedied by these measures. The teeth should have attention to eliminate them as foci of infection, altho proper tonsil attention is in itself decidedly helpful in improving the vitality of the teeth. The gastrointestinal tract, especially the colon, is affected in most patients, and diet, exercise, and proper colon hygiene could always receive attention to advantage and may have to be instituted in occasional cases.

I believe auto vaccines will be an added advantage in special cases and can be used

to advantage in the large percentage.

However, these measures are mainly accessory. They do not cure. The principle is to eliminate toxins from the system especially by thoro drainage thru the lymphatic ring, particularly by attention to the tonsils as outlined above. To most nose and throat specialists, blinded as we are in our enthusiasm for enucleation of tonsils, these statements will undoubtedly be accepted with much incredulity. However, when one has acquired the degree of proficiency in treatment to cure hay fever, the unusual and unexpected clearing up of many obstinate and refractory diseases of all kinds will be a revelation to him. He will learn to recognize many serious after-effects due to tonsillectomy which are not generally recognized or admitted as such at present. The question when to remove tonsils will no longer be a problem for him. He will rarely advise it.

I would like to go more thoroly into the tonsil question as I believe it is of far more importance in its practical bearing in all lines of medical effort than the significant rôle it plays in hay fever, but the confines of this paper prohibit me doing so at present.

I do not expect men trained in enucleation only, will quickly reap the full advantage of the methods outlined, but I would strongly urge you to begin along the lines I have suggested. I have no conclusions to offer different from what I have already presented, namely:

That hay fever is essentially of bacterial origin, is easily controlled in practically all cases and curable in nearly the same proportion.

I would emphasize, however, as a further advantage, the fact that curative treatment can be given equally well at any time during

the year and finally that such curative measures depend on the successful elimination of toxins from the system and mainly on the recognition of the important rôle the tonsils play in the human economy in effecting this purpose.

THE PREMATURE INFANT.

BY

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The word "prematurity" means, birth before term, which nomenclature is derived from the two words, *partus præmaturus*. In addition we have accompanying this condition of prematurity, a qualitative and quantitative deficient vital energy, and a lowered resistance to all infections. This is an important factor to be constantly borne in mind, making the urgency of prophylactic care quite obvious.

The picture of the premature infant in the early days of life is quite characteristic, and presents a picture of under-weight according to the degree of prematurity. Besides its diminutive size, it displays in varying degrees, an absence of the life and vigor, which is seen in the full-term infant. It is emaciated and the skin is both soft and delicate, uniformly red and somewhat transparent, showing the underlying blood-vessels; there is little subcutaneous fat. The delicacy of the skin renders it liable to traumatic results, and at times results in the formation of erosions. The surface is cool, pale and sometimes cyanotic, and according to the stage of its development it may or may not show the appearance of laguno,

and its nails may or may not be well formed, for a like reason. The face bears an expression of senility, the respiratory movements are barely noticeable, there is a lack of muscular motions, and the infant is torpid and extremely somnolent; the eyes are closed and the cry is feeble; the power to suck and to swallow is often greatly diminished. These premature infants are very susceptible to the action of drugs and the normal quantity that would be safely borne by a full-term infant, may destroy life. Observers have noted the extreme susceptibility of premature infants to the poisoning with bichloride of mercury or carbolic acid when used as a wash.

Etiology.—Many and various causes are responsible for the occurrence of prematurity, and differ widely in their importance. External influences such as severe physical exhaustion, mountain climbing, horse-back riding and the other strenuous out-door pastimes, all too violently indulged in, may have a direct effect upon the premature expulsion of the infant. The lifting of heavy objects, trauma of various, premature rupture of the fetal membranes, all these can furnish cause as an etiologic factor. Twin pregnancy is also a cause. The following, too, may play an important rôle in the production of prematurity; faulty nutrition, and physical excesses, as well as psychic alterations in the mother. Maternal diseases play an exceedingly important part and chief among these is syphilis which, by extension to the fetus, affects its development. Other maternal diseases are neuritis, heart disease and tuberculosis. Of the acute infectious diseases, scarlet fever is the one most dreaded; it may also occur in pneumonia. Its occurrence in influenza depends upon the severity of the attack. Malaria, smallpox, measles, typhoid, play a

rôle of minor importance. Acute and chronic alcoholism are particularly prone to cause prematurity. There are various other poisons which produce intoxication of both the mother and infant, and can give rise to premature birth—these are especially, phosphorus, arsenic, mercury and lead. Characteristic symptoms of lead poisoning have been noted in a premature infant.

Prognosis.—The majority of infants born before the completion of the seventh month of pregnancy die within a very short period of time. Its chances for remaining alive are very small. As to weight, in giving a prognosis as a general rule it can be stated that any infant weighing less than 2.2 pounds cannot live, altho there are a few cases reported in which the infant born was in the sixth month of development, and survived. Hereditary influences, such as parental diseases, especially maternal (syphilis and tuberculosis), are very important for determining life for the infant. When the premature birth is artificially induced, because of some mechanical reason, the prognosis is, naturally, better. The behaviour of the infant immediately after birth is very important prognostically. Infants that cry lustily, move in a lively manner, drink well or even suck of their own accord on the breast, of course have much better prospects than that type of infant who presents an apathetic picture—is motionless, whose body surface is cold and with an internal temperature of 90 degrees Fahrenheit. Many premature infants have a varying degree of congenital pulmonary atelectasis, which generally lowers their vitality and powers of resistance. Those bearing marked evidences of lues, die within a few days. Sclerema is an unfavorable sign. The method of feeding bears an important relation in prognosis, for the mortality is far

greater among the premature infants that receive artificial or substitute feeding than among those who receive breast milk. Infectious diarrhea and digestive disorders play an important part in the causation of death.

Treatment.—There are three important points to be considered in the treatment of premature and feeble infants, as follows:

- (1) The furnishing of warmth towards the maintenance of body heat.
- (2) Proper and careful feeding.
- (3) Proper administration of hygiene and care.

1. *Maintenance of Body Heat.*—Since the time of Tarnier, who introduced the first model of incubator simplicity, there have been many and various forms of incubators and brooders used and discarded, and today it seems that the consensus of opinion is to return to the most simple model. To my mind this is best exemplified by the type used in the Infants' Hospital in Boston, and is termed an "incubator bed". This consists in an ordinary infant's crib, padded, and with the lower half covered with a blanket, a sufficient amount of space being left at the top for the admission of air, plentifully supplied. A premature gown is the ideal form of wrapping to use for the infant, which is made of a thin layer of absorbent cotton, about a quarter of an inch thick, between two double layers of fine gauze. (The entire incubator bed with all accessories is very comprehensively illustrated in Dunn's "*Pediatrics*.") This combination of gauze and cotton is stitched together. To the top of the gown is attached a hood, made of the same materials. The dimensions of the gown should be about 26 inches long and 23 inches wide. The infant is wrapped in this gown and placed in the incubator bed. As the means for the supplying of heat, an

electric pad or electrotherm may be used, but great caution must be constantly used in employing this form of heat, as grave results have occurred due to the ignition of the bed clothes on account of some defect in the electric apparatus. A simpler means and one just as efficient is the use of hot water bottles, or better still, is the use of earthenware bottles wrapped in flannel. The earthenware bottles retain their heat for a considerable length of time. One or two of these bottles are placed in the bed alongside of the infant. A thermometer is placed in the bed, and all is covered with a blanket. By changing the water in the bottles, a more or less constant temperature can be retained in the incubator bed. This temperature must be regulated by the rectal temperature curve of the infant. Ordinarily, with infants of fairly good vitality, the thermometer should register 85 to 95 degrees Fahrenheit. If the rectal temperature shows a tendency to remain subnormal, more external heat will be necessary, and the temperature of the bed should be elevated to 98 degrees F.

Feeding.—Above all things mother's milk is desirable, and should be used in the nourishment of premature infants whenever possible. The feeding of these infants presents a difficult problem. At this time, as a rule, the infant is unable to grasp the breast, therefore it must be fed with a pipette or a nursing tube, specially constructed for this purpose, called a Breck feeder. This consists of a graduated glass tube narrowed at the ends; over one end is placed a proper sized nipple, and over the other end is placed a rubber compression bulb. The advantage of the Breck feeder over giving the milk with a spoon or medicine dropper is that the sucking reflex is not entirely abolished. If the infant is able to

nurse at the breast, it should be put there at intervals of two hours. In all probability it will be unable to empty the breast, so the remaining milk should be withdrawn by means of the breast pump. In this way, more breast milk can be obtained for use in the alternate feedings when the infant is not put to the breast. When the infant is too weak to nurse at the breast, the milk is pumped from the breast and transferred to the infant by means of the Breck feeder, spoon or pipette. In very torpid infants, it is sometimes necessary to resort to the gavage method. For this purpose, a very small rubber catheter is attached to an exceedingly small funnel improvised from a test tube, and this is passed thru the month, and not thru the nose. The infant may thus be gavaged several times in 24 hours. If the mother has not a sufficient supply of milk, as is often the case with premature infants, a wet-nurse should be obtained if possible. The wet-nurse should always be accompanied by her own infant, and should nurse it, as the requirements of the premature infant will not be sufficient to maintain the normal function of lactation in the wet-nurse. The amount of food will vary with the age and the weight of the infant, and must be gradually increased. With a seven months' baby, weighing from three to four pounds, we can begin with a half ounce every hour, the feeding to contain a mixture as follows: 1 per cent. fat, 0.25 per cent. proteid, and 5 per cent. sugar. The casein of the cow's milk is rather difficult for the premature infant to digest, therefore it seems a wise procedure to use the above formula, substituting a whey mixture or split protein formula as follows: Fat 1 per cent., sugar 5 per cent., whey protein 0.75 and casein 0.25. Lime water can be added. Additional changes in the composi-

tion of the food will solely depend upon the weight curve temperature and general symptoms of the infant, the physician being guided by the general principles of infant feeding.

Hygiene and Care.—Premature infants are very susceptible to the change in temperature which follows birth, and in order to avoid a chill, the infant should be immediately wrapped in a blanket as soon as it is expelled. It should not be bathed, but should be well anointed with oil. It should have a constant supply of fresh air, and so must be kept in a room that has a proper communication with the out-door air, and which room is supplied by the ordinary method of heating. Under ordinary circumstances the temperature of this room should be from 70 to 72 degrees F. When the premature infant in a properly constructed incubator bed does not show a gain in weight and increase in temperature after a proper interval of time, and the temperature of the room is 72 degrees F. a marked improvement will be demonstrated if the temperature is raised to 80 degrees F. In the Infants' Hospital in Boston, the "80 degree room" has proven of valuable aid in the treatment of certain premature infants. There should be a minimum of handling and exposure. In one particular case brought to the attention of the writer, a fatality resulted due directly to an excess of handling, when the parents asked that the infant be thoroly examined in order to ascertain the normalcy of the premature infant. A thoro examination was made, and the infant succumbed. When it is necessary to change the diaper, this should be done rapidly and with as little exposure as possible. Morning and evening temperatures should be taken daily, and the premature infant be protected from excessive

light and noise. It should have one or two bowel movements daily and should take its nourishment at regular intervals. If it loses in weight, remains cold, and in a state of torpor, breathes in a shallow manner and irregularly, develops cyanosis, dyspnea, diarrhea, cough or vomiting, the prognosis is indeed grave. The infant should be turned on its side, so as to avoid, if possible, hypostasis in the lower part of the lungs. Cyanosis is combated by friction and flagellation. If vomiting occurs, the food should be further modified, peptonized, or reduced in quantity, or the intervals of feeding may be lengthened. If there is a collection of mucus in the throat, it must be very carefully aspirated by means of a small rubber catheter introduced into the back part of the pharynx. Success in feeding will aid in overcoming many of these obstacles.

TUBERCULOSIS OF THE ANUS AND RECTUM.

BY

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Tuberculosis is one of the terrible and destructive infections of the lower intestinal tract which may appear in a variety of clinical pictures. It may be primary or secondary. Primary tuberculosis of the anus or rectum (appearing as the only evidence of phthisis in the individual), is very rare. Secondary tuberculosis on the contrary is quite frequently seen as a result of swallowing of sputum by the patient who is suffering with pulmonary tuberculosis. In health the hydrochloric acid of the stomach will destroy the tubercle bacilli but in debilitated individuals where the gastric secretions are of weak quality the bacilli pass into the intestine unimpaired. Infection

may also occur thru the ingestion of tuberculous food—milk from tuberculous cows, for example—or occasionally by scratching with an infected finger nail.

Anal Tuberculosis.—Tuberculosis of the skin about the anus may appear as miliary, ulcerative, lupoid or verrucous lesions. Miliary tuberculosis about the anus is very rare and occurs as a complication of tuberculosis of other organs. It develops as millet seed sized nodules grouped in crescents or circles which begin in the hair follicles, sebaceous or sudoriparous glands of the skin. Later as the infiltration enlarges necrosis of the superimposed skin occurs and small cup-shaped ulcers with ragged borders appear. There is a slight discharge of seropus, but no bleeding. These ulcers usually continue as small individual necroses but sometimes they coalesce into extensive wounds. Their blood supply is poor and they do not bleed on handling.

Ulcerative Anal Tuberculosis.—Tuberculous ulcers at the anus begin insidiously. Sometimes there is a history of a known injury, although often this injury was so slight as to be forgotten until brought to mind by the examiner's questions. For example, a diarrhea, horseback or bicycle riding or a thrombotic hemorrhoid has been followed by an area of induration at the anal margin which persists for a long time and finally ulcerates. The necrosis may begin on the external skin or within the anal canal. As the ulcer spreads it usually involves both the perianal skin and the anal mucous membrane. Tuberculous ulceration in the anal mucosa does not confine itself to a sulcus as does a fissure but widens out in all directions. The borders of these ulcers are clean-cut, undermined and pale with a ring of raised induration all about the ulcer. The base of the ulcer is irregular and gray

in color and does not bleed easily. On the surface of the ulcer may be seen small yellow tubercles. There is not much pain with the passage of feces or on the manipulation of examination. This is quite in contrast to the sensitiveness of the irritable ulcer. This freedom from pain distinguishes the tuberculous ulcer from fissure, chancre, mucous patch and rodent ulcer. This discharge is scant and thin and but rarely is tinged with blood.

suffered with hemorrhoids which prolapsed for several days and were finally replaced by a physician. The patient applied an ice bag to the anus almost continuously thereafter for the next four weeks, and about that time noticed a marginal abscess. The abscess was opened but did not heal and has continuously discharged since that time a yellowish excretion. There is no pain at stool or on walking and but little pain after the manipulation of dressing the wound.

On inspection we found an ulcer at the muco-cutaneous junction in the posterior or quadrant of the anus and to the right of the



FIG. 1. Tuberculosis of Anus.

The clinical course of these ulcers varies greatly. Some extend slowly while others spread rapidly and destroy all structures. Unlike syphilitic ulcerations, there is no healing at one spot while ulceration progresses at another, but rather the tubercular ulcer spreads continuously in all directions. The ulcer is not usually fatal but it contributes to the general breakdown of the patient.

Case C 2.—S. M., aged 43, occupation a retail grocer clerk, nativity Irish-American. In June, 1915, he showed pulmonary tuberculosis and has been under institutional care almost ever since. In August, 1916, he

median line. It was one-half inch wide by one inch long and extended up into the anus and out on the skin. Its edges were irregular and rolled in. Its base was dry and glistening, not bleeding and was without any points of granulation. (Figure 1).

Lupus at the Anus.—Lupus was long considered a syphilitic manifestation but is now known to be tubercular. It is slow in spreading but in its aggravated type is terribly destructive of tissue. The disease begins at the muco-cutaneous junction at the anus or vulva as a small, soft, reddish-brown nodule in the corium (apple jelly ulcer), which later breaks down into small,

clear-cut ulcer, irregular in outline and having an indurated base. A cheesy pus discharge can always be found in some of the affected area. Cicatrization appears in some ulcers at times but it soon breaks down and the ulceration extends wider. A dense fibrous infiltration beneath the ulcer seems to prevent its deepening but does not interfere with lateral spreading which may be caused by enlarging of the individual ulcers and also large ones.

Lupus is to be differentiated from cancer and syphilis.

Cancer rarely occurs in early life and if it does it runs a very rapid course. On the contrary, lupus frequently appears in children and persists in adult life. The base of the cancer is nearly white, indurated, uneven and glazed and its edges are everted. Lupus ulcers are usually multiple, have soft, insensitive bases and edges covered with granulations. The secretions of a cancer are scanty and fetid while the discharge of a lupus is profuse and odorless.

Syphilis is distinguished by its history, or skin lesions, mucous patches, enlarged lymphatic and Wassermann reaction.

Treatment of Tuberculosis at the Anus.—Prophylaxis is all important. The tuberculous patient should be thoroly and repeatedly impressed that it is thru swallowing the sputum that the bowels become infected. Various procedures have been carried out hoping to produce immunity but the use of tuberculin and also the transplanting of tuberculous lymph nodes into normal animals have both been unsatisfactory. When infection and ulceration have occurred, medication by mouth is not beneficial. These patients have poor digestion and unpalatable drugs by mouth further upset the appetite.

Treatment of Anal Ulcerative Tuberculosis.

—If the patient's initial tubercular lesion is of moderate extent or is not active the ulcer may be thoroly curetted with the Paquelin cautery, removing all of the necrotic tissues of the edges and base of the ulcer. I prefer the cautery to the knife as by that means the lymphatics are sealed beyond and dissemination is prevented. Thus we improve the patient's resistance. Following the cauterization the anus should be exposed to the sunlight and air for several hours each day. The patient can soon be taught how to spread the nates and expose the anus. If any part of the body which is normally covered shall be thus suddenly exposed directly to the sun's action blistering and painful tanning occur. Therefore, during the first few days the nates should be covered with a cotton sheet, later this is replaced with three layers of cheesecloth, one layer of which is removed after a few days, the second a few days later, but at least one layer of cheesecloth should always cover the parts as a screen against the action of the sun. It is remarkable how quickly relief and healing take place. When a patient is weak and we think not equal to the cauterization even under local anesthetic, surprising results may be obtained by exposure to the sun.

Treatment of Lupus at the Anus.—Satisfactory results are obtained by phototherapy (Finsen light), concentrating the light rays on a small area of skin for about an hour. The next day a small blister appears and this is dressed with soothing ointment. After all irritation has subsided another exposure is given. The treatment is very tedious. The Roentgen-ray also produces good results and is sometimes more convenient. Its action is pushed to the extent of producing a burn which is then protected with a soothing dressing. The scars fol-

lowing either of these plans of treatment are much less objectionable than those of my other plan of procedure.

Zinc cataphoresis has been employed very satisfactorily in the treatment of lupus and epitheliomas. While there is no doubt of the efficacy of the Roentgen-ray for the relief of these growths, the process takes much time and is not devoid of danger. In the use of zinc cataphoresis, however, a perfect result may be had without danger or pain, oftentimes in a single treatment.

The ulcer is made clean with hydrogen peroxide or boric acid solution and a pledget of cotton saturated with 10 per cent. solution of cocaine is wound around a block tin electrode of suitable shape and attached to the anode of constant current. The cathode is the usual pad of absorbent cotton so placed as not be under the control of the patient. The anode upon which the cocaine has been placed is now applied to the ulcer and a current strength of from 5 to 10 Ma. is maintained for about five minutes, or until complete anesthesia of the part is apparent.

The cotton is now squeezed with the finger until it is as dry as possible and dipped into a saturated solution of zinc sulphate and again applied to the sore, using a current strength within the limits of tolerance of the patient which is usually about 10 Ma. until the ulcer has assumed a decidedly blanched appearance. Every portion of the sore must be treated until it turns white. No particular care need be taken to prevent contact with the sound tissue immediately surrounding the ulcer. It will not be affected.

In a day or two the surface of the ulcer turns black, and about the fourth day the crust can be removed leaving a smooth healthy cicatrix.

The case should now be watched for a few weeks for any small nodules that may appear in the margin of the sore. If any appear, they should be given another treatment.

A DOCTOR'S TRAVELS IN CENTRAL AMERICA.

BY

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Roosevelt, Malokai.

Reference has been made by different writers to the expatriation of individuals who have gone to distant and comparatively unknown countries to live obscure lives away from all contact with their early environment.

One such is Major E. A. Burke now conducting a small hotel at Puerto Cortez, Honduras. He was once owner and editor of the New Orleans *Times-Democrat*, with a large staff of able writers, among them Lafcadio Hearn, who was sent by Major Burke to Central America to "write it up as it is."

Actively engaged all his life up to the time he left for Honduras, the Major acquired large properties, and at one time was offered \$1,000,000 for his interests. He now owns some 30 gold mines tied up by lack of transportation facilities. He is 82 years old, has given \$32,000 to found an industrial school for boys and expects to leave all the property he has for the benefit of Central American "youths".

It was most interesting to listen to his account of his experiences as a Confederate officer. He organized a staff and sent four boats into the Everglades when they were a *terra incognita*, had adventures in Mexico under Diaz whose friend he was and has

figured prominently in a dozen or more Central American revolutions.

He is a delightful conversationalist, a good writer and an effective speaker. His wife, who died in 1914, was a prominent society woman of New Orleans, who spent some of her wealth to help on Clara Barton's work. Yet, owing to some history it is no wish of mine to inquire into, the Major is here alone, quietly living out the remainder of his days.

The Major, who knows state officials, is not ungenerous with his favors, and gladly

and another farther south, we expect to visit and enjoy.

The South Seas has been a favorite place for these self-banished persons, some of whom have become hermits who refuse to see any of their own race. One such we had on Hawaii, whose past history remained dark, and who was said by his neighbors to be a retired buccaneer!

I have been in touch by letter with an old man who now lives in Mexico away from his kind, "driven" there, he says, by the failure of Providence to establish the South-



FIG. 1. Old Market Place.

gave me much information about all of the Latin republics.

At Omoa where old Spanish ruins are to be seen, is another expatriate, a Texas ranger, who has grown rich here.

He has a delightful *hacienda*, extensive estates, hosts of servants, and entertains those he likes with lavish hospitality.

He was once a prominent man in the United States, but becoming disgusted over some social event or accident, he left his own country.

Two other expatriates, one at La Ceiba,

ern Confederacy!

Undoubtedly Central America, and especially Honduras, is full of opportunities for men of large means, as in cattle raising, sugar growing, bananas—and for men of limited means, too, as in small fruit growing, cacao, coffee, and so on.

But under present conditions, politics, the lack of transportation facilities, good roads, regular steamship and railroad service, any industry must languish. The resources and opportunities are here—they merely await development.

The resident who is able and willing to wait will get the "worm" because he is "early"; the settler who comes after development arrives will have to pay for it, and perhaps lose his chance to get rich. You cannot have your civilized conditions with their comforts (?) and conveniences by the side of extraordinary industrial and commercial opportunities; the man who would avail himself of natural resources must pioneer.

Under present conditions then, few American men and fewer women would

Just now, at sea-level, it is hot. Nobody said it wouldn't be, and the Lord has provided for a low temperature. It ripens bananas. In it the jungle thrives producing mahogany and other precious woods. Orchids, palms, monkeys, parrots, and mosquitoes flourish. At this moment a little sand fly is biting my wrists and ankles. Ticks must be avoided, and "jiggers" get into your skin. They are genuine annoyances. So are snakes, malaria, hookworm and revolutions. So are the delays, the *manaña* spirit. Yet these are all really



FIG. 2. Picture of Major Burke (third person from left) taken by Dr. Goodhue in front of hotel at Puerto Cortez.

care to live here. Those who will not put up with discomforts, who must have everything which modern invention provides, who cannot live simply and to an extent primitively, had better stay at home. Some persons cannot be adaptive—they cannot pioneer. If they venture this far a-field, they fail to discover the advantages which surely lie back of the disadvantages, and they return home to do the country a real injustice.

Central America has real drawbacks.

small matters which time will correct, incidental, no background whatever for the magnificent attractions and advantages in the foreground.

Those who have read of the discovery of gold in California, and of the early mining days there, who know how hard it is now to find traces of the glittering stuff, may be surprised to learn that in any place gold is easily found, or that visitors may secure particles and even nuggets if they take the pains to work for them. From the rivers

of Central America, Indian women annually pan out over \$250,000 worth of gold. At Rosario over \$16,000,000 have been taken out, and immense wealth in silver and gold easily secured, awaits capital. This capital is and will be hard to get for such investment, because the history of mining enterprises here and elsewhere is discouraging, and because here or elsewhere mining is looked upon as more or less of a "gamble".

The National Railway of Honduras runs

hotels, garages, and so on. Prices are reasonable.

If the revenues of the country were wisely expended as they are in this section, the whole state would develop rapidly. Most of the Latin-American officials I have met remind me much of our own Hawaiian politicians in appearance, dress, ease of manner, and good nature. They like conventions, investigations, missions on various matters. If they want to find out what we



FIG. 3. Building from which new railroad starts.

a daily train thru from the Atlantic side to San Pedro del Sul, a very pretty and enterprising town which is called the metropolis of northern Honduras.

Here are good stores, bakeries, markets,

would inquire into by a short telegram or letter, they appoint a committee to determine.

San Pedro del Sul, Spanish Honduras,
C. A.



USE OF CORPUS LUTEUM EXTRACT.

Experience in the exhibition of corpus luteum extract therapeutically has led Wood to rely on its use in cases of simple vomiting of pregnancy, dysmenorrhea, when this is neither obstructive nor membranous in type; mammary development at or after puberty, when menstrual life is fitful and sexual development is retarded, and in certain cases at the menopause when menstruation has not ceased.—Practitioner, May, 1923.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

IX.

"Would that it might be a boy," groaned Rallia Singh to his aged brother Hari, who squatted on the floor in the center of the vegetable stall, placidly smoking the *hookah*.

"Did the priest give you no assurance?" mildly asked the older man.

"He took my five *rupees*, and directed

"Six wives I have had," went on the aggrieved husband, "and no son yet, to bury me."

"Why not call the foreign Doctor Miss Sahib?" timidly suggested the brother.

"Foreign doctor!" ejaculated Rallia Singh scornfully. "Not only does she claim to be unmarried, but she goes everywhere without even a veil!"

"It is the custom of the foreign women," ventured Hari. "Their men permit it."

"And her fees!" continued Rallia, ignoring the explanation, "I doubt not she would



(Courtesy of Presbyterian Board.)

FIG. 1. India Meat Market in a Hindu Bazaar.

my offerings to Mother Earth, and then promised me that my deeds in a previous incarnation would determine the sex of the child." His last words were drowned in the burst of a torrential downpour, which drove in at the back of his tiny shop, and splashed mud on the greens and long white radishes at the front.

A loin cloth and turban apiece amply clothed the two old men, for the shower only temporarily abated the stifling heat of the monsoon. In five minutes the sun blazed forth again, and the stuffy bazaar became a cauldron of steam, perfumed with assorted odors. Blending with the distant notes of temple bells came the buzzing of flies in the meat stall adjoining.

ask me ten *rupees* before she made an end of her visits."

"Even so. You can afford that, and more, if it would bring you a son. Gopal Ram called her for his wife, after she had had five girls, and a boy was born the same day."

"True," hesitated Rallia, fidgeting with his toes. "Perhaps—I have no ambition to call a foreign woman into my house, but it might be well, Kiri is in great pain this morning." He let go of his toes. "Piyara!" calling to Hari's young son who was playing in the mud, "run to the hospital and fetch the Doctor Miss Sahib."

Having made his decision, the venerable husband now developed symptoms of

energy. Leaving his brother in charge of the shop, he stepped down into the miniature courtyard at the rear. On the high walls were perched several crows, awaiting an opportunity to pilfer from the shops. The one mud-plastered room which comprised his house had its open doorway at the side, facing a wall. There was no window. Small chance that Kiri would be seen by any human eye but her husband's.

A goat jumped up as he entered, but his young wife lay still on the corded bedstead, in the darkest corner. Her groans did not affect him pleasantly.

"It is time for you to lie on the ground now," he announced in a business-like tone.

"On the ground!" exclaimed the sufferer. "It is all wet."



(Courtesy of Presbyterian Board.)

FIG. 2. Waiting for the Doctor.

"On the ground your child must be born. 'Mother Earth allows no evil to rest upon her bosom,'" he quoted. And grasping the light bedstead he rolled the naked girl gently to the mud floor. The silver ornaments on her wrists and ankles clanked incongruously. Driving the goat to its corner, he dragged the bedstead outside and stood it against the house.

* * * * *

From the point where they had to leave their cart, Dr. Douglas and Miss Paul, the nurse, picked their way thru a long narrow lane of shops, piloted by the unclad Piyara. Mere booths they were, in reality, with the high floor serving as counters. Silverware, brassware, cloth, embroidery, jewelry, grain, spices, sweets, fruit, meat and vegetables, each in its own stall. From the

sweets and the meat, flies had to be brushed away before one could make a selection. Their course was hindered by a few straggling customers, a beggar waylaid them for alms, and they were squeezed against the wall when they met a washerman with a lofty pile of clothes on his tiny grey donkey.

At the vegetable stall Piyara halted. "Just wait a minute," he said, clambering up into the shop. Placing a box for the visitors to step on, he showed them thru to the courtyard. There sat the two old men, Hari Singh indifferently smoking the *hookah*, Rallia in an attitude of expectancy.

As they appeared, he rose and salaamed gravely. "It is my wife, Miss Sahib, with her first child," he explained. "She is only fourteen. I very greatly desire that it may be a boy."

Stepping into the house out of the glare of the sun, Dr. Douglas was at first conscious of little except a musty dampness and suffocating stable odors. As her eyes became adjusted to the dim light, she descried the goat, half inclined to flee from the strange presence.

Guided by sounds of distress, Miss Paul quickly found their patient and knelt beside her. Dr. Douglas followed.

"On the floor!" she cried. "There is a bed outside!"

"That the birth may be propitious, Miss Sahib," returned the husband solemnly.

Dr. Douglas turned her attention to the child wife.

"Miss Sahib, oh Miss Sahib," she whispered softly, "please help me. I used to go to the mission school."

"I must take her to the hospital," announced the doctor gravely.

"Name of God!" cried the old man, twisting his ears. "Do you not understand that she is a *purdah* lady?"

"Certainly," she answered. "That need make no difference. She can ride in a *dholie*,¹ and you may send a servant to cook for her if you wish. Many high caste ladies come to us that way."

"Ai, sorrow upon us! Six wives I have had, and all their children were born in this house."

Kiri shuddered convulsively, and drew Dr. Douglas' hand close to her breast.

"Are the children living?" asked Miss Paul.

¹ Curtained chair.

"There were no boys, the three girls who did not die are married these many years."

"If she stays here, Kiri may die as well as the child," predicted the doctor.

He faltered. "If you could promise a boy —."

"Your chances for a fine healthy boy are much better if you let her come," she assured him.

"Very well, so be it. I will pay, Miss Sahib, whatever is necessary."

"Two years I have lived here," murmured Kiri when her husband had left the room. "I thought I would never see the world again."

A *dhoolie* was soon secured and brought close to the door, so that even the coolies might not see their passenger. With red curtains tightly drawn, and the jealous husband walking alongside, Kiri rode out thru the vegetable stall and down the lane, in state if not in comfort. Under the fierce sun, the air within her enclosure was more stuffy than that in her house. The glimpse of the world which she had fondly anticipated was denied her. Not a crack could she find in the curtain.

Kiri could not alight at the hospital until her husband had inspected the room offered for her reception. The white bed and walls impressed him deeply. "Foreign magic," he muttered. "Very well, so be it."

It was with difficulty that they got him outdoors. After that, on his frequent visits, he was kept from passing the front door by the simple statement, "There are other *purdah* ladies in the hospital. They do not wish men passing thru."

After his shop was closed for the day, he brought his brother with him, when the sky was afame with the glory of a monsoon sunset—banks of purple and green and gold, surmounted by filmy sheets of fire-red.

As Dr. Douglas stepped out upon the verandah, he read her face.

"Is it a boy?" he grasped.

"Two boys," she responded.

"Two! Now indeed is my old age glorified! Would that I had brought my former wives to you!"

Vomiting may often be controlled by one-drop doses of tincture of iodine in water at half-hour intervals.—*Medical Summary*.



H. M. BIGGS, M. D., Sc. D., LL. D.

BY

S. ADOLPHUS KNOPF, M. D.,

New York City.

With the passing away of Dr. Hermann M. Biggs on the 28th of June, 1923, one of the greatest figures in modern hygiene and the prevention of disease, and one of the most illustrious physicians disappeared from the ranks of American medicine. Yet Dr. Biggs was known not alone as a distinguished medical authority in America, his fame was international and the story of his life is full of incidents which distinguished him from the many.

Hermann M. Biggs was born in Trumansburg, N. Y., September 29, 1859. After passing thru the local public school, Hermann attended Cornell University, from which he received his degree in 1882. One year later he passed his final examination at Bellevue Hospital Medical College and served as interne in Bellevue Hospital from 1883 to 1884. With the formation of the Bellevue Hospital Alumni Association he became its first president. In 1910 the New York University conferred the degree of LL.D. upon Dr. Biggs, and in 1917 he received the same degree from the University of Rochester; in 1920 Harvard University honored him by conferring upon him the degree of Doctor of Science.

From the time of his graduation from Bellevue Hospital, Dr. Biggs has served as pathologist and visiting or consulting physician to many of our leading New York hos-



Picture by Courtesy of Dr. S. A. Knopf

HERMANN M. BIGGS, M. D., SC. D., LL. D.

pitals and tuberculosis sanatoria. Aside from these positions, he was professor of pathological anatomy of Bellevue Hospital Medical College from 1885 to 1894, professor of therapeutics and clinical medicine from 1897 to 1907, associate professor of medicine from 1907 to 1914, and professor of medicine of the New York University and Bellevue Hospital Medical College until the time of his death. He was a member of the International Health Board of the Rockefeller Foundation and had been a member of the Board of Scientific Directors of the Rockefeller Institute for Medical Research since its foundation. He was also an honorary fellow of the Royal College of Physicians of Edinburgh and of the Royal Sanitary Institute of Great Britain. Dr. Biggs was twice elected president of the National Tuberculosis Association (1905-1907), and served as president of the Association of American Physicians and of the American Social Hygiene Association for the year 1922. The King of Spain conferred a decoration upon him for the great services he rendered the world as a hygienist and sanitarian.

Besides having made many valuable contributions to nearly all the clinical, pathologic, and bacteriologic branches of internal medicine, Dr. Biggs gave the most conspicuous services to sanitary science, particularly in the prevention of tuberculosis, in his position as General Medical Officer of the Department of Health of the City of New York. He filled this office from 1901 to 1914 and since that date had been the Health Commissioner of the State of New York.

As General Medical Officer of New York City Dr. Biggs was responsible, more than any other medical man in this or any other country, for obtaining the official recognition of tuberculosis as a communicable and

reportable disease in order to combat it successfully. It was due to the efforts of Dr. Biggs and his co-workers, Drs. T. Mitchell Prudden and Joseph D. Bryant, that a voluntary notification of private cases of tuberculosis and a compulsory one of all cases treated in institutions was inaugurated by the New York Health Department in 1893, and that in 1897 the Department adopted regulations requiring the notification of all cases. However, Dr. Biggs was not satisfied with merely a statistical control of tuberculosis. He inaugurated at the same time a system whereby an early and definite diagnosis of all cases of tuberculosis could be obtained. This consisted of the gratuitous examination of any specimen of sputum sent to the Health Department's laboratory for that purpose (1894). To this Dr. Biggs added educational measures. Circulars teaching the simple rules of the prevention of tuberculosis designed to reach the different classes of the community, were widely distributed. For the foreign population these were translated into their respective languages.

In 1902, when it was my privilege to present an appeal for the formation of a committee or society for the prevention of tuberculosis in New York, Dr. Biggs was the first to sign it, and from the day of the first meeting he was a most active member of the Committee for the Prevention of Tuberculosis of the Charity Organization Society. Under the inspiration of Dr. Biggs this Committee, now the New York City Tuberculosis Association, worked hand in hand with the Health Department in the educational propaganda. Again it was thru the initiative of Dr. Biggs that the first municipal dispensary (clinic) for the treatment of the consumptive poor was established in the City of New York. In the course of years these dispensaries have been

multiplied so that today there are no less than twenty dispensaries distributed thruout the city under the Health Department's direction. Following the example of the Health Department, ten tuberculosis clinics connected with the larger hospitals have also been established in a comparatively short time.

In 1904 Dr. Biggs established the Riverside Hospital-Sanatorium for advanced cases on North Brother Island as one of the Health Department's activities, particularly designed to remove, by compulsion if necessary, cases of tuberculosis constituting centers of infection in their homes. The medical director and physician-in-chief of the first New York municipal sanatorium, which was opened at Otisville, N. Y., in 1906, was Dr. Hermann M. Biggs. He occupied this position until 1914. From its inception he took the keenest interest in this institution so that today it is one of the largest sanatoria of its kind, having three units—males, females, children—with 600 beds. To Dr. Biggs' initiative is due the use of that invaluable adjuvant in the modern treatment of pulmonary tuberculosis, known as work therapy, which is successfully employed at the Otisville Sanatorium. Dr. Biggs has also the distinction of having been president of the first tuberculosis preventorium for children, which was founded some years ago in Farmingdale, N. J., largely thru the munificence of Mr. Nathan Straus.

The tuberculosis work, inaugurated by Dr. Biggs and being carried on by the Health Department of the City of New York, has served as a model to many cities in this and other countries.

In 1887 Dr. Biggs became one of the consulting pathologists of the Department of Health of the City of New York. For several years he had felt the primary impor-

tance and necessity of administrative action in relation to tuberculosis and he urged upon the Board of Health of New York City the immediate enactment of suitable regulations for the sanitary surveillance of this disease. The year previous, in 1886, the mortality from tuberculosis was 3.55 per 1,000 population; in 1910 the mortality was 1.85. This means a reduction of the mortality from tuberculosis by nearly one-half during a quarter of a century, largely due to the labors and anti-tuberculosis activities directed by Dr. Biggs. This reduction in the mortality of tuberculosis has gone on ever since, so that in 1920 it was only 1.09 and in 1922 0.86 per 1,000 population in New York City.

After Dr. Biggs took the helm of the New York State Department of Health, he transferred his enthusiasm and interest in the tuberculosis problem to the State at large. He inaugurated a special tuberculosis division of the New York State Department of Health for educational propaganda, and a few years ago was instrumental in working out a plan for traveling clinics. These clinics are of invaluable help in the discovery of early cases of tuberculosis, in the supervision of former sanatorium cases, and in education in the prevention of tuberculosis thru visiting nurses. The local physicians are invited to cooperate and to visit these clinics.

Dr. Biggs' activities in anti-tuberculosis work and his vast knowledge and experience were, of course, utilized during the recent World War. He became a member of the Council of National Defense, of the Advisory Committee of the United States Food Administration, and of the American Red Cross. The Rockefeller Foundation sent him to France (1917) to investigate the unfortunate tuberculosis situation which was reported to exist thruout that country,

particularly in the war zone. Dr. Biggs' report on his return from France resulted in the appointment of a tuberculosis commission under the leadership of Dr. Livingston Farrand, which has done incalculable good, not only in taking care of the immediate needs, but by stimulating an active anti-tuberculosis propaganda and the establishment of clinics and sanatoria thruout France. In the fall of 1920 Dr. Biggs took over temporarily the direction of the General Medical Department of the League of Red Cross Societies with headquarters at Geneva, Switzerland.

As a one time private pupil of Dr. Biggs and having been associated with him in tuberculosis work for nearly thirty years, my thoughts have naturally concentrated first upon the tuberculosis work which was so near to his heart. He knew how to impart his enthusiasm to others and I will feel forever indebted to him for the encouragement he gave me and the inspiration he was to me in my own labors as an humble tuberculosis worker. But it would be an injustice to the memory of this great man if in this tribute to a beloved teacher and friend I were to emphasize only his tuberculosis work. As the director of the first municipal bacteriological laboratory in the world, and as one of the earliest teachers of bacteriology in this country, Dr. Biggs rendered invaluable service to general medicine. He was mainly responsible for the introduction of diphtheria antitoxin in this country and was also one of the first to inaugurate, as a part of the Department's work, the treatment of hydrophobia which he had learned at the feet of the great Pasteur. In short, Dr. Biggs, while distinguished as a tuberculosis specialist, was an eminent sanitarian, a clinician and pathologist of wide experience, and an excellent therapist. He has been the teacher of thousands of

American physicians, the physician of many distinguished patients, and also the physician of many of the humble and lowly in our public institutions. His labors on behalf of the prevention and scientific treatment of tuberculosis and other infectious diseases have been invaluable and have certainly helped to decrease the general morbidity and mortality to a most remarkable degree, not only in New York but thruout the United States and in countries where the sanitary methods he devised were adopted.

To but few men has been given the privilege to accomplish as much in a life-time for the good of humanity as has been granted to Dr. Biggs, yet his marvelous success had no influence on the geniality of his personality. He was modest, quiet but determined when he felt that he was on sure grounds. Some of his innovations in preventive medicine were at one time opposed by the more conservative element in the medical profession, but these innovations have now become axiomatic and his opponents have become his friends and admirers. Dr. Biggs was a true friend, helpful to those in need, and ever ready to aid a noble cause. He was a devoted husband, a loving father, and in his family life truly happy. Mrs. Biggs was in every sense his co-worker, always taking the deepest and most active interest in the sociological part of the Doctor's anti-tuberculosis work. All this must have been a great compensation for the annoyances that are inevitable in the career of a pioneer and public official. He died young, comparatively speaking, yet his life was well rounded out. Dr. Biggs passed away at the zenith of his fame, adored by his family, loved by countless patients, friends, and pupils, and mourned by a grateful city for whose physical welfare in the prevention of disease and death he had so nobly lived and labored. I am

sure that I express the feeling of the thousands of students who attended his lectures and clinics and graduated from the school which he adorned as a teacher for nearly forty years, when I say "Farewell, dear Master, we thank you for what you taught us, we shall not forget you, and only hope that we may prove worthy of having been your disciples."



A Clinical and Pathologic Study of Fifty Cases of Hyperthyroidism.—As Hill states, in a recent issue of the *California State Journal of Medicine* (April, 1923), the pathologic changes in the thyroid gland of patients who present the clinical symptoms of hyperthyroidism have been the subject of a great deal of discussion for a number of years. In 1908 Wilson of the Mayo Clinic reported his findings in an examination of 600 simple goiters and 294 thyroids from cases of exophthalmic goiter. He stated that it was possible from a study of the glands themselves, supplemented only by a knowledge of the age and sex of the patient, to state on broad general lines, first, that the patient did or did not have an exophthalmic goiter, as it was then defined; second, the stage of the disease at the time the gland was removed; and, third, approximately the severity of the disease. In his opinion this could be done with a fair degree of accuracy in more than 85 per cent. of the cases.

A little later Plummer concluded, from a study of over 2,000 cases of goiter that had been operated upon, that it was possible to determine from a study of the clinical aspects of the case alone, first, whether or not the gland was hyperplastic, adenomatous or had advanced colloid changes; second, the effect that might be expected from the removal of a given portion of the gland in any individual case. In his opinion this could be done in 95 per cent. of the cases.

These statements were so much in advance of the theories of other observers that quite naturally they attracted considerable attention. Since then several others have reported their work along similar lines. As was to be expected, some of them do not agree with the conclusions of Wilson and Plummer, the majority believing that neither specific nor constant anatomical changes in the thyroid gland of exophthalmic goiter could be demonstrated, and that it was impossible, as yet, to make definite pathologic differentiation between adenomas that produce symptoms of hyperthyroidism and those that do not produce such symptoms.

Goetsch, in 1916, emphasized the importance of the relative number of mitochondria in thyroid adenoma. He reported that they were more numerous in the adenomas causing the symptoms of hyperthyroidism, and that thereby a means was afforded of distinguishing, pathologically, between adenomas producing hyperthyroidism and those that did not. This differential feature is apparently not confirmed by the data reported in his later papers. In 1916, Goetsch also expressed the opinion that there is a very different form of intoxication in thyroid adenoma from that found in true exophthalmic goiter. In this respect he agrees with Plummer.

Crile's views on this question do not coincide with those of either Plummer or Goetsch. In his recently published volume, "Crile's Clinic," he says: "The various types of goiter should logically be regarded as varying degrees of the same or similar processes, and that, certainly as far as treatment is concerned, no differentiation should be made between exophthalmic goiter with hyperplasia and the so-called 'thyrotoxicosis' from adenoma, or of some of the atypical forms of the disease."

In addition to the two distinct clinical entities of adenoma with hyperthyroidism and exophthalmic goiter, Plummer recognizes a small intermediate group. In this group at operation the thyroid is found to have, beside the adenoma, more or less typical areas of hypertrophy and hyperplasia of the parenchyma, varying between very small intra-adenomatous or extra-adenomatous areas to a small adenoma imbedded in a typical hypertrophic parenchymatous thyroid.

Of the seventy cases, sixty-six (94 per

cent.) were correctly diagnosed as to type. There were sixteen hyperplastic goiters, thirty-two toxic adenomas, two mixed glands and twenty non-toxic adenomas and simple colloid goiters.

Fifty-nine (84 per cent.) were correctly interpreted as to toxicity. Of the eleven misinterpreted cases, six were diagnosed as probably not toxic, but showed clinical symptoms of hyperthyroidism. Five cases were diagnosed as probably toxic, but presented no clinical symptoms of hyperthyroidism.

Pituitary Gland in Children.—Fraser (*Edinburgh Medical Journal*, September, 1921) examined forty pituitary glands obtained from children aged from one to twelve years. Comparison with the gland of the adult shows that the variation in the size of the "pituitary lake," or intraglandular cleft, is a feature distinctive to the child. In children the pituitary shows distinct periods of activity and rest; there seems to be a definite relation between the stage of activity of the pars intermedia and the amount of distension of the pituitary lake. The major part of the contents of the lake appears to be a homogeneous colloid material derived from the pars intermedia; there is also a secondary contribution from the eosinophil cells of the anterior lobe. The active stage of the anterior lobe is synchronous with the active stage of the pars intermedia, and is partly preliminary to, and partly synchronous with the distension of the pituitary lake. These changes have no relationship with any morbid condition.

Intestinal Bacteria and Thyroid Gland.—Harries (*British Medical Journal*, March, 1923) summarizes his observations as follows: Exophthalmic goiter is due to the excessive absorption of tryptophan from the intestine; this, in turn, is traceable to the absence of the indol producers from the intestine. The absence of indican from the urine indicates the absence of indol producers from the intestine. In exophthalmic goiter the early disappearance of indican from the urine is of a serious prognostic importance. Operative surgery has a definite place in the treatment of exophthalmic goiter. Medically, much can be done by

suitable dietetic measures. Diffuse parenchymatous goiter is characterized by an excess of indican in the urine, suggesting an excessive destruction of tryptophan. If this excess gives place to a diminution or complete disappearance of indican, it suggests that the case is assuming the exophthalmic form. Myxedema is due to atrophic changes in the thyroid gland, which loses its capacity for dealing with the circulating tryptophan, whether that substance be excessive, deficient or normal in amount. The disease is thus compatible with the presence or absence of urinary indican.

Vitamines of Growth (A and B) and Endocrine Glands.—Glanzmann (*Jahrbuch fur Kinderheilkunde*, Berlin, February, 1923) kept rats on a vitamine-free diet until the growth stopped. Daily addition of 1 gm. of dried thymus from calves started the growth again, but it stopped as soon as the thymus was discontinued. Other glands—except the sexual—have no effect in such doses. He believes that thymus is the central organ for metabolism of vitamines in young animals. After puberty, vitamines are stored in the sexual glands and provide thus the first endowment of the progeny.

Treatment of Goiter With Ultraviolet Rays.—Langemak (*Deutsche Zeitschrift fur Chirurgie*, March 5, 1923) reviews the experience at Erfurt with ultraviolet ray treatment in 128 cases of goiter, with or without local or internal iodine treatment or phosphorus treatment. Not a trace of the goiter could be found on re-examination in 74.3 per cent., and in the others only the closest scrutiny showed any traces of it. He takes a photograph of the patient before treatment is begun.

A Method of Treating Exophthalmic Goiter.—Pajzs (*Zentralblatt fur Chirurgie*, March 24, 1923) gives a preliminary report on a method he has employed in about fifteen cases. He injects alcohol into the diffuse parenchymatous goiter tissue. The injections are repeated until the pathologic secretion of the goiter is sufficiently re-

duced, which fact is measured by the general condition of the patient. At first, from 1 to 2 c. c. of 80 per cent. alcohol is injected—if possible, deep within the parenchyma, on one side. The first injections cause a marked general reaction. The tachycardia is increased temporarily; frequently diarrhea occurs, and the exophthalmos appears to be greater, doubtless due to the resorption of toxins liberated by the coagulating effect of the alcohol in the goiter tissue. The injections are then cautiously increased. At first alternating, then daily one or two injections on both sides, later two or three injections, of from 0.5 to 1 c. c. of alcohol are given until the desired result is obtained. If the general manifestations are increased or local inflammations (disappearing usually in one or two days) should appear, the injections are stopped and fomentations are employed. The injections are made at different points each time. In a week a considerable diminution of the goiter will be noted. In from three to four weeks after the injections are begun, the general condition of the patient starts to improve. In some cases, from 70 to 80 injections are required to effect a cure. As little as possible of the goiter tissue should be destroyed; otherwise, thyroprival symptoms may be produced.



A Neglected View of the Alcohol Question.—“A side of the alcohol question which has been quite neglected, deserves some consideration,” says Edward Willard Watson. A prominent “dry” lady recently was reported as saying that she hoped before she got thru with her prohibition labors, “that there would not be a drop of alcohol left in the world,” not knowing, in her physiologic innocence, that long before that time, she could not be living, unless she had laid in a special supply.

Alcohol is manufactured by Nature in many indispensable ways, and life cannot go on without it—it is a natural force. The grain that ripens in the fields and furnishes

us with “the staff of life,” can only start growing by producing alcohol. It consists in a germinal end and a mass, greater or less, of starch. Dry, when ripe, it can perhaps exist for many centuries, in Egyptian catacombs, in prehistoric dwellings of the cliff-dwellers, stored away from moisture; but planted in the soil, and moistened by the rain, its germ, or ferment end, dissolves and permeates the starchy mass, sets up alcoholic fermentation, and we have the beginning of life and growth.

Physiologists tell us that the new-born babe, before taking food contains in its blood an appreciative quantity of alcohol, as much, anyway as the Volstead Act allows. Man, too, has a native ferment and it transforms the starch he eats into sugar and alcohol, and the sugar in his food, already half way, also into alcohol. When he is unnaturally exhausted he craves a stimulant; old habit suggests beer, or whisky, or wine; failing any of these, he craves sugar, candy, or sweet drinks (which may make him gouty), and to increase the insufficiency of his native “still”, he hears, perhaps, of the power of yeast, and eats too many cakes a day.

Sometimes from taking too much starchy food in his diet, or having too little exercise, or the giving out of his machinery for carrying the conversion of the sugar to its next, alcoholic, stage, he becomes overloaded with sugar to the danger-point, and then, wonderful Nature tries to get rid of it by sending it thru the kidneys, and the man has temporary or permanent diabetes—the kidneys suffering also, or being already insufficient. If even this means fails, patient Nature tries another, and the excess of sugar that the kidneys are unable to get rid of undergoes the acid degeneration and man finally become poisoned with acid, and dies, Nature having no further means of postponing the fatal end.

This is why denying starch and sugar in his diet allows the patient a longer life.

Alcohol then must be the great life-force. By it we live and have our being. No wonder then that (tho stoutly denied by the ardent prohibitionist) it acts as a stimulant, in fact as the real, great stimulant; for it is the only direct natural stimulant, far more rapid than any other. This is no excuse for “getting drunk.” That should be legislated about, and repressed as much as

possible; but instinct will always fight, to the death against its complete abolition, even if it could be done. Regulation of the use of alcohol may be difficult, but abolition will prove impossible, unless we exterminate the human race. Except as an emergency stimulant, where either, in the failing power of the aged, and in exhausting fevers and in surgical or other kinds of shock, wine and fermented fluids may give us all we need; but this the prohibitionist, in his ignorant, radical fanaticism denies his world.

When the Arabian chemists discovered and named their product Al Kohol, they named it better than they knew—"The Spirit"—and its effects were regarded as little short of miraculous! It revived and saved thousands who before that day were doomed to death.

The more one considers the growth of grain, the staff of life, the more one is forced to consider the natural process of fermentation as the starting point of life and growth; there is no evading it. The continuation of it in bodily chemistry may be investigated further, but the results of it cannot be denied. The change from starch to sugar is real. Its stoppage at that point, partially or more completely, is followed by disaster; and its complete stoppage is followed, to save life a little longer from sugar poisoning, by acetic degeneration of sugar, acidosis. Incidentally, it might be added that it is almost impossible to make a diabetic intoxicated; also one can, if one investigates, find that a diabetic as a rule craves alcohol, and many mysterious cases of a sudden falling into the alcoholic habit will be explained by investigation revealing that the patient, instead of being depraved, is suffering from that disease, and is striving by instinct for a remedy.

This is not a plea for getting drunk; but a plea for looking the matter up and determining not to be a fanatic nor a fool. The last perhaps can't help it; the former, at least in serene points seems to be, and the world is his victim.

Since the above was written insulin—a ferment said to be derived from pancreas—is considered to be a specific for diabetes, if administered hyperdermically each day, arresting at once the symptoms.

It should be remembered that a ferment is a substance that always makes alcohol when in contact with moist starch or sugar.

DISTRESS AMONG FRENCH PHYSICIANS.—

To those who complain of the difficult plight of many American doctors as a result of post-war disorganization in the country's economic values, the distressing picture painted of the conditions of the French doctors at the sixty-first congress of the General Association of French Physicians will bring a realization of acute hardship in comparison with which the situation in this country is almost a paradise. In his address dealing with the grave problem in France, Dr. Doizy, appointed reporter of a commission to investigate for the Association, cited instances of distress among the profession for which there is no parallel in the United States. To understand the significance of this report, it must be borne in mind that, while the income of the French doctor has increased only slightly since the war, the cost of living has leaped from 300% to 800%; that many retired medical men, who had invested their economies so as to yield them what was in 1914 a comfortable living, now find this income far from adequate for even the barest necessities; and that, in the general depreciation of bonds in many countries, many doctors have sustained almost a total loss of their incomes from what they had regarded as secure investments for their old age. With these facts in mind, the pessimism of Dr. Doizy is easy to comprehend.

"The distress of the disinherited of the so-called liberal professions, of ours in particular," said Dr. Doizy, "inspires the profoundest pity. One cannot, in spite of oneself, suppress a feeling of revolt against the injustice of fate when one sees the wretched lot reserved for certain of our colleagues. During half a century they have ministered to the needs of ailing humanity, and their reward is that they now have to worry about their daily bread. With the advent of illness or merely old age, they are prevented from exercising one of the most difficult of professions. Their slight savings, if they existed at all, have rapidly disappeared despite the voluntary self-denial which the physician, in his pride, imposed upon himself like all other classes. But in these times of the high cost of living, this gilded misery cannot be borne indefinitely. Impotent, incapable of making the few professional visits which would prevent him from dying of hunger, the unfortunate doc-

tor, however, his pride may suffer, comes, after long hesitation, to knock at our door. Our Association grants him 1,000 francs (\$60) a year if he is at least fifty years old and has been a member for at least fifteen years; 1,200 francs a year if he is over seventy and has been a member for at least thirty-five years.

"My dear colleagues, I do not reproach the Association, which is doing all it can within its limited means, but the situation of our aged confrères is pathetic. They cannot count on their families. How many among them have been able to afford a professional education for their children? With what sorrow they must have realized that they could not bear the cost of sending their sons to college. Once it was the dream of the workingman to see his son become a doctor. How many of us today would consider ourselves happy to see our sons choose a trade which rewards its men so much better!"

ETIOLOGY AND DIAGNOSIS

The Significance of Sergent's "White Line."

—Diagnosis of hypoadrenia by means of *la ligne blanche surrénale* was first described twenty years ago by E. Sergent (*Presse méd.*, 1903, 11, 813; an account in English by the same author appeared in *Endocr.*, January 18, 1917). If the skin of the abdomen be stroked lightly with a smooth object a white line appears after a certain latent period; this line persists for a short time and then fades away. Sergent ordinarily outlines a square around the umbilicus with a blunt object such as the end of a fountain pen or even the finger tip, taking care to avoid rubbing. The early or premature appearance of an outline is a sign that the operation has been improperly performed. The patient must lie quite still. After about half a minute a pale line appears where the rubbing has been made; the part becomes white after about a minute, remaining so for from one to three minutes, then gradually fading. The phenomenon appears only in well-defined cases of adrenal insufficiency, but certain sources of error must be considered. Lighting naturally plays an important part, and too bright light may occlude the sign. Anything likely to affect the capillary circulation, such as clothing, a poultice, etc., may interfere, and time should be allowed after their removal before applica-

tion of the test. In all cases the patient should be at rest for at least fifteen minutes, with the abdomen free but slightly covered, before the test is made.

Sergent does not claim that this test is an absolute means of diagnosis, but when he obtains a positive response he at once looks for other and confirmatory signs. He regards the white line as a result of hypotension brought about by hypoadrenia, the light stimulation of the skin causing vasoconstriction to replace the peripheral vasodilation present in arterial hypotension.

The Etiology of Menstruation.—Kross (*Amer. Jour. of Obstetrics and Gynecology*, March, 1923) believes that the statement is justified that clinical and experimental evidence is directly opposed to the theory that the corpus luteum is the causative factor in menstruation and that it points clearly and definitely to the mature graafian follicle as the responsible factor in this process.

The Etiology of Cancer.—Magrou (*Presse Médicale*, Paris, March 14 to 28, 1923) theorizes on the cause of malignant disease, taking as his basis Perrin's recent research on the rays forming visible and invisible light as the cause of displacements of molecules. His theory seeks to explain the evolution of matter and of the universe and cancer growth as a cosmic phenomenon. One of Magrou's arguments is the distinct influence exerted on karyokinesis by radiation. His theory also opens a definite field for research on experimental malignant disease by cooperation of biologists, chemists and physicists.

Heart Disease in Pregnancy.—Herrick (*New York Medical Journal*, May 2, 1923) claims that the important points in the management of pregnancy and heart disease are:

1. Careful antenatal supervision is imperative.
2. All patients showing signs of decompensation at any period of pregnancy should have medical treatment, preferably in a hospital.
3. The response to medical treatment of the average case of chronic valvular disease of the heart in pregnancy is satisfactory and the same principles govern the treatment as govern the treatment of such cases not associated with pregnancy.
4. Induction of labor should never be attempted in case of a decompensated heart until thorough trial has been made of medical measures. Disregard of this rule has often led to disaster.
5. Hard and fast rules to govern the decision to terminate pregnancy in heart disease cannot be set down. In general, if decompensation occurs early in pregnancy, if it does not respond to medical treatment, if it has been severe despite proper care in previous pregnancies and if the signs and symptoms indicate

serious circulatory defect despite treatment, termination is usually wise.

6. The question of the method by which pregnancy should be ended is largely an obstetrical one, the point of greatest importance being the guarantee of a short and easy second stage. It should be remembered that if serious cardiac breakdown can be averted, it is wiser not to attempt delivery in advance of term. Cæsarean section is rarely necessary. Sterilization should come up for consideration in appropriate cases.

The Causation of Obesity.—According to Preble (*Boston Medical and Surgical Journal*, April 19, 1923) obesity is almost invariably due to bad dietary habits and not to errors in metabolism or to heredity. Overweight of 15 or more pounds is an increasingly serious condition with advancing years, conducive to heart, arterial and kidney disease, diabetes and hypertension. Obesity is easily curable, and it is the duty of the physician to acquaint his patient and the community with the gravity of the condition, and the ease with which it can be controlled. Regulation of the diet is the important thing. Only in rare cases is glandular or other drug therapy indicated. The cause of obesity may be simply too much food, but it is more apt to be an excess of carbohydrate or fat, or both, in the diet. The diet and daily habits as regards work, exercise, sleep, etc., of the individual patient must be scrutinized carefully, and excesses corrected. Care should be taken that the patient receives enough protein, otherwise weakness will result. A rather high protein diet, from 90 to 110 gm., is prescribed, except for nephritis, in which class the amount is regulated according to kidney function.



Diet in the Treatment of Digestive Ills.—In his valuable paper on "The Rationale of Digestive Therapy," Gaither states without qualification that diet is of paramount importance in the treatment of digestive disease. Unfortunately many medical men, believing the subject to be vast and formidable, have evaded the study of what is really a simple and easily understood method of treatment. The dietitian must be thoroly versed in the following fundamentals: The physiology of digestion (the mechanical factors being of great import); the elements comprising all articles of food and their relative percentages of proteins, fats, carbohydrates, vitamines, water, salts; the tissue-formers; proteins, mineral matter, water; work

and heat-producers, which are carbohydrates and fats principally. The caloric value of food must be known, always bearing in mind, however, that a well-balanced diet is the desideratum; a diet containing the proper proportion of vitamines rather than a mass of food of specified number of calories.

Physical, chemical and thermic properties of food must be known. Liquids are either (1) bland (non-irritating) as milk (raw or modified), solution of egg albumin, whey, cream, buttermilk, cocoa, cream soups, asparagus, celery, pea, etc., liquid carbohydrates; or (2) stimulating, as beef extracts, beef juice, bouillon, broths, coffee, tea, fruit juice.

In a sparing diet we eliminate the irritants. These are:

I. *Mechanical*, coarse vegetables and bread, meats, raw fruits, nuts.

II. *Chemical*, highly seasoned foods, condiments, alcohol, extremely acid fruits.

III. *Thermic*, extremes in heat and cold.

Soft Foods.—These consist of cereals, such as cream of wheat and farina, purées of green vegetables and fruits—macaroni, spaghetti, rice. Eggs prepared soft, the pulp of orange or grape fruit, butter, cream-cheese, blanc mange, custards, gelatin, ice cream.

Solids.—Poultry, fish, game, meat, vegetables, fruits, breads, salads. Altho a general diet may be indicated it is advisable in certain cases to modify the character of various articles of diet as in the case of chicken, fish, poultry and meat. This may be accomplished by mincing, shredding, scraping and chopping, and the vegetables and fruits may be altered by cooking and passing thru a food chopper or sieve.

The coarse stimulating foods as vegetables, whole-grain bread, fruits and salads are termed "roughage" and are extremely valuable in atonic sluggish conditions. Such a diet is contra-indicated in all inflammatory (particularly acute), irritative or ulcerative lesions. It is a safe rule to withhold meat, as the last article of diet to be prescribed, because of its great tendency to irritate a susceptible stomach or intestine. The action of coarse vegetables and raw fruits must also be closely watched.

Whether or not milk may be classed as a liquid food is a question which always precipitates discussion. Personal experience leads me to conclude that in a certain percentage of cases it does not act as such. On the other hand, one cannot deny that the great majority of stomachs and intestines digest this food exceptionally well. In very acute inflammations of the stomach and intestines I prefer to withhold milk in the initial stage of feeding.

It is worthy of note that idiosyncrasy plays an important rôle in dietetics and that different patients, with or without identical lesions, will react quite differently to the same food. Further, the personal tastes of the patient should be respected whenever possible. When certain articles of food disagree it is not always necessary to withdraw them. They may be diminished in amount or prepared in a different manner. For example, raw fruits, vegetables and other foods may be cooked, puréed or creamed, while meats may be scraped, minced or chopped.

Variation in diet is of fundamental importance. Often a patient who presents every indication for a soft diet will lose appetite and reject the food offered, but will show immediate improvement when a diet agreeable to his wishes, in a form theoretically contra-indicated, is prescribed. This is also an important point to remember in relation to drug therapy.

The Modification of Cow's Milk in Infant Feeding.—Eric Pritchard (*Lancet*, April 29, 1922) gives the following as essential for all methods of infant feeding:

1. The caloric value must be sufficient to supply all the demands of growth and repair, heat production, mechanical work, and the elaboration of secretions.
2. The ratios between the proteins, fats and carbohydrates must be about 1.5, 3.5 and 7.0—those of human milk.
3. All the accessory factors, as salts (organic and inorganic), lecithin, cholesterol, extractives, vitamins, etc., must be adequate in quantity.
4. The food should not only be adjusted to the infant's digestive capacity at the time, but it should also promote their further development.
5. The food must not contain pathogenic bacteria and it must be given at such intervals and in such a manner as to promote the development of good habits. The failures of artificial foods must be judged by immediate results instead of by long deferred effects.

Practically, a baby under one year of age requires fifty calories a day for every pound of body weight, but in addition the proper proportion of proteins, fats and carbohydrates. The addition of a few ounces of broth, made from bones and mixed vegetables, can supply the deficiencies and is a practical way of supplementing cow's milk dilutions. If the milk is diluted half and half it should be predigested at first and the time of predigestion gradually decreased. Cow's milk should always be sterilized, as the sterilization does not change the digestibility of milk in any way. The following formula is recommended:

Milk (average quality).....	10 ounces
Cream (thirty-three per cent)....	1 ounce
Sugar (lactose, and later maltose and cane sugar, equal parts)...	1 ounce
Broth	4 ounces
Water to make	1 pint

This humanized milk has a caloric value of twenty. The broth is made from one pound of bones (with marrow), one tablespoonful vinegar, and one and one-half pints water, which is allowed to simmer for eight hours, and then a handful of mixed vegetables and Irish moss (iodine) are added and allowed to simmer one hour longer. This is allowed to jell. This supplies gelatin and all the other accessory foods.

Constipation Treated by the Excitation of the Anal Reflex.—The use of the defecation reflex thru the spinal cord is a novel aid in the

treating of constipation advocated by Professor W. A. Newman Dorland of Chicago, in the March, 1923, issue of the *International Clinics*. This reflex can be artificially excited in a very large proportion of patients, within fifteen to twenty seconds, by resorting to the following procedure. A folded sheet of toilet-paper is laid over the anus; the patient relaxes the sphincters completely and bears down, while with the index finger of the right hand she gently makes a series of rapidly broken compressions, about ten or twelve or less, directly over the anus. On ceasing this motion there will immediately follow a desire to defecate, which should be aided by a gentle bearing down. It has been estimated that the period of time elapsing between the anal stimulus and the initial reflex is about 0.02 second. It must be borne in mind that holding taut the rectal sphincters will completely abolish the defecation reflex, since this involves a strong contraction of all the muscles of the pelvic floor, which action results in immediate inhibition of the defecation reflex. Dr. Dorland believes that if this simple procedure is carefully carried out at a regular daily hour, preferably in the early morning, the average case of constipation will be relieved and a regularity of body-habit established that will work wonderfully for the physical benefit of the patient. Laxatives, purgatives and cathartics undoubtedly have their place in the treatment of constipation, but their use should be restricted as largely as possible, and should not usurp the preferable methods of regulation of the bowels by the adoption of carefully selected diets, the observance of proper hygiene, the performance of daily exercise of various appropriate kinds, and the cultivation of the normal body reflexes.

Artificial Pneumothorax.—Dr. Nathan Barlow (*N. Y. Med. Jour.*, January 3, 1923) discusses some principles of immunology applied to treatment by artificial pneumothorax. His views are summarized in the following conclusions: 1. Artificial pneumothorax produces in suitable cases of tuberculosis the most brilliant improvement. Up to the present time this improvement has been but temporary in the vast majority of cases. 2. Artificial pneumothorax is not a treatment of tuberculosis, but is merely an adjunct to treatment. 3. After pneumothorax the clinical symptoms of tuberculosis are suppressed before there is any real progress toward cure, and consequently are not only worthless, but actually misleading as guides to treatment. 4. The physical signs of so-called activity are suppressed both on the compressed side and in the compensating lung, and may not reappear until the disease has made more progress than would be required to cause marked signs in an ordinary patient. 5. The physician should constantly keep in mind the principles of immunology upon which these suppressions depend, and should remember that the usual guides to treatment, based on clinical symptoms and physical signs, fail entirely in cases of pneumothorax. 6. Any patient who

has been given artificial pneumothorax should continue to receive a treatment for tuberculosis which would be adequate for the pathologic condition which is present, and which would undoubtedly be given if the physical signs and clinical symptoms were not masked by the pneumothorax.

The Treatment of Pellagra.—All in all, the most effective treatment of pellagra is the diet, claims Durham (*Kentucky Med. Jour.*, July, 1922). If the diet is correct, pellagra will never occur, and in preparing this diet for my patients we prepare the bread from meal made of the whole corn—this corn to be selected from well-matured sound ears and from flour made from the whole grain of the wheat; this is sometimes referred to as the offal of the mill or chops. The legumes are fed in plentiful quantities, whole fresh milk, butter, fresh eggs, and fresh vegetables, and to be sure that a generous supply of the water-soluble vitamines are injected, a bowl of the liquor from all of the cooked vegetables is served to each sufferer as well as the vegetable itself.

The bread made from the chops at first may not be well received by the sufferer, but soon it will be found acceptable as the appetite increases, also the liquors may at first be rejected owing to the eccentricity of the patient, but by well-directed effort and well-timed suggestion by the nurse, it, too, will soon be enjoyed.

Patients are encouraged to take all of the milk that they will drink, three times a day. Raw vegetables are given plentifully if well borne. Fresh lean meats with a plentiful supply of the fats, not killed by cooking, all cooking to be of the shortest duration possible and at as low a temperature as possible. However, if it is preferable to subject the food to a high temperature for a shorter period than at a low temperature over an extended period of time, as the vitamines seem to be injured more by exposure to heat at a medium temperature for short periods.

Soda and all alkalies are excluded from the making up of the bread.

The Tolerance of Children for Digitalis.—McCulloch and Rupe in the *South. Med. Jour.* (May, 1922) summarize their views as follows:

(1) The method of administering massive doses of digitalis to children should be the same in detail as for adults.

(2) The use of massive doses to children is entirely practical, and under proper supervision possesses no source of danger.

(3) That amount of digitalis necessary to produce clinical improvement coincides with the amount necessary to produce vomiting and a fall in heart rate. These two phenomena may be taken as criteria that an optimum therapeutic effect has been obtained.

(4) Children with heart disease require an amount of digitalis per kilo of body weight which is about 50 per cent. greater than would be required for adults.

(5) There are two indications for the use of digitalis in children: First, those who are suffering from heart disease and who are in a state of chronic cardiac failure; second, those who have a regular rapid heart rate when that heart rate cannot be slowed by other measures.

(6) Massive doses of digitalis are contraindicated in two groups of children with heart disease: First, those who have an acute infection or toxic myocarditis; second, those who are suffering from acute cardiac failure with hearts that are overloaded.

Rheumatic Heart Disease.—Raven maintains (*Lancet*, London, June 24, 1922) that if rheumatic heart disease could be made equally with tuberculosis a notifiable disease, many tragedies would be avoided; it would soon be generally recognized that every case in which there has been the slightest sign of damage to the heart requires long recumbency and longer observation; medical officers should be enabled to supervise the condition under which patients receive their treatment, and institutions should be provided for their recovery if, as will be the case, as a general rule, treatment at home is not giving the heart its best chance; lastly, careful watch should be kept over all children with damaged hearts, until they reach an age when they may be expected to exercise the necessary self-restraint. The hearts which are much in evidence in the examination room, exhibiting various combinations of murmurs and thrills, are not those which should interest us most. The most interesting heart is the one which, known to have once been involved in an acute rheumatic infection, is nevertheless observed to be functionally efficient ten, twenty, forty and sixty years afterward.

Alimentary Toxemias in Nervous Disorders.—Tompson, in a recent issue of the *British Medical Journal*, states that in the treatment of nervous disorders from the point of view of alimentary hygiene, particular attention should be paid to the mouth and associated cavities.

Overconsumption of meat and of sugar should be avoided; the taking of copious amounts of fluid is of assistance in alimentary toxemias, and where the colon seems to be the seat of the alimentary poisoning, lavage of the large intestine is useful.

Balneotherapy in Kidney Diseases.—F. Kisch of Marienbad (*New York Med. Jour.*, December 22, 1922) points out the value of mineral waters in various kidney troubles. Cases with increased blood-pressure and hypertrophy of the heart will be benefited by carbonic acid baths and drinking cures with cold sodium sulphate waters; patients with chronic nephritis with constant increase of blood-pressure, secondary contracted kidney and nephrosclerosis are bene-

fited by a sojourn at a spa provided the circulatory insufficiency has not reached too high a degree; chronic nephritis without blood-pressure increase is benefited by moderately warm thermal baths, mud baths and iron baths; in nephroses, while larger experience is necessary, theoretically, balneotherapy in this group of cases will become important.



Vitamines in Meat.—According to a writer in the *Medical World* (March, 1923) meat, one of our most important foodstuffs, has been assigned a rather low value as a source of vitamines, but according to experiments made by the United States Department of Agriculture various kinds of lean meat and the edible organs of cattle, sheep and hogs have been found to contain varying quantities of vitamine B, also known as the antineuritic vitamine. The results of the tests, which consisted in feeding muscle from different parts of the carcass and the various edible internal organs to pigeons, have been published as Department Bulletin 1138, Vitamine B in the Edible Tissues of the Ox, Sheep and Hog, by Ralph Hoagland. Copies may be obtained by addressing the Department of Agriculture, Washington, D. C.

It is the deficiency of this vitamine in polished rice that causes the disease beriberi among people living largely on a rice diet. The disease can be cured by a ration of unpolished rice. It would, of course, be cured by a ration containing a meat with this vitamine.

Meat may now be regarded as an important source of vitamine B, and certain of the internal organs, particularly the heart, liver and kidney, are relatively rich in the three vitamines, A, B and C. Pork in particular—that is, the lean meat—is rich in vitamine B, comparing favorably in this respect with the liver and kidneys, organs heretofore recognized as containing an abundance of this vitamine. Beef appears to contain a much smaller proportion of the vitamine, while mutton occupies an intermediate position. Of the internal organs, the heart seems to be the richest in this vitamine, but the liver and kidney have only slightly lower values. Other organs contain smaller quantities. This class of meat products is an important and economical source of vitamine B.

"Sleeping Sickness."—“The U. S. Public Health Service has no statistics in regard to the prevalence of *encephalitis lethargica*, popularly known as sleeping sickness, that are

sufficiently reliable and complete to warrant a statement as to the extent of the disease throughout the United States,” says Surgeon General H. S. Cumming. “The disease is ‘reportable’ by physicians in comparatively few states; and in the larger part of the country the only data available are based on newspaper reports. Moreover, the disease is rather easy to confuse with some other diseases; and its prevalence is, therefore, likely to be unduly magnified. Thus, in an investigation made by Dr. H. F. Smith, of the Public Health Service, of the 1918-19 epidemic, 22 per cent. of the supposed cases had to be excluded as being really cerebrospinal meningitis, cerebral syphilis, brain abscess, tuberculous meningitis, epilepsy, poliomyelitis, hysteria, or acute alcoholism.

“The disease appears to be only difficultly communicable. Not a single secondary case is known to have occurred in the immediate families of the patients reported in 1918-19, altho some 900 persons were exposed.

“The fatality is rather high. Of the 159 cases studied by Smith death resulted in 46, or 29 per cent.

“It is interesting, tho perhaps not significant, that the peak of the outbreak of 1918-19 was reached in New York City in January; in Virginia in February, and in Louisiana, Texas and Illinois in March. In California the largest number of cases reported in any one month was in April. Whether this progress was related to the season of the year or was merely a result of the spread of the disease is not known. Comparison with the present spread may throw some light on the subject.

“The disease is slow in development and long in duration. The period of convalescence is variable; in some cases recovery is completed within two weeks after the subsidence of the acute symptoms; but in others it is prolonged and leaves its record on the mind, on certain muscles, and on the nerves of the cranium. The mental trouble, however, usually passes off eventually.

“The appearance of encephalitis in epidemic form has, except for one epidemic reported from Austria, always been preceded by an epidemic of influenza. Forty-six per cent. of the cases studied by Dr. Smith had had influenza and 54 per cent. had not. The influenza-attack rate has been ascribed to the lowering of the vitality of the patients by the influenza; but has also been explained as being really due to another attack of influenza which has invaded the central nervous system of the body. Whether or no there is any connection between the two diseases has not yet been established.”

The Health of Criminal Women.—Dr. Eliza M. Mosher brings her excellent paper (*The Medical Woman's Journal*, January, 1923) to a close as follows:

1. Intemperance and unchastity are the two vices which fill our penal institutions with women.
2. The influence of these vices is detri-

mental to health of body, increasing its susceptibility to disease and lessening its recuperative power.

3. The diseases which follow as a direct result of these vices are venereal, alcoholism, dyspepsia, rheumatism and general anemia.

4. Morbid conditions of body react upon the moral nature, increasing and perpetuating the tendency to criminality; hence the importance of careful medical supervision as a reformatory measure.

5. More ample provision should be made in all large cities for the isolation and thorough treatment of venereal patients of both sexes, either by the addition of special wards to the general hospital or by the establishment of hospitals for this class.

6. The women who commit high crimes—that is, larceny, burglary, arson, manslaughter, etc.—possess a more sensitive nervous organization than those who commit only offenses against chastity and public order.

Importance of Case Records.—Mussey, in a recent issue of the *Journal of the Kansas Medical Society*, thinks that a tendency in group medicine as well as in the large hospital is for the physician who examines the patient to lose sight of the personal element in the diagnosis and care of the patient. The close personal friendship which has existed for many years between the general practitioner and his patients must necessarily be lost. The tendency to diagnose disease in an impersonal manner becomes increasingly strong as methods of diagnosis become more mechanical and as the volume of work performed by one person or a group of persons increases. The physician must be on guard constantly lest he consider the patient a case and not a sick person who has come for relief. Each member of a group of successful physicians as well as the general practitioner must have a sense of personal sympathy for the individual patient.

It is very important to guard against the trend toward overspecialization. A physician who devotes all of his time to one specialty must, in the development of that specialty, center his mind on the questions that pertain particularly to it. His field becomes narrowed and, while he is able to center the immediate object under the spot-light of his intensive thought, the surrounding area will be more or less hazy and dim. Specialists have made great strides in recent years toward the diagnosis and relief of ailments previously unrelieved. Yet the work of the various specialties must be coordinated for the patient by the clinician with wide experience in medical diagnosis.

The foundation of diagnosis rests on the history of the case and on physical examination. Without these, diagnosis fails. The necessity for a careful plan for the student to follow in obtaining the history of the patient's illness has long been recognized in medical teaching. This, as we know, demands the family and personal history, the history of previous illnesses, and the description of the present complaint. We

are all familiar with the necessary details, but how well do we follow them?

In hospital practice and more recently in office practice, it has become customary to record the facts obtained. To be of value the history must contain all the essential facts, emphasized according to their importance; the symptoms should be recorded in their chronologic relation to each other. The history must be concise. Verbosity in history writing leads to errors in diagnosis, by confusing the mind so that the main points of the complaint may be overlooked.

The physician, in taking the history, should not fail to appreciate the patient's point of view; this is of extreme importance. If at the beginning the patient's confidence is gained, the true facts may be much more easily and accurately obtained. A patient who presents himself with a multiplicity of complaints and is very glib and anxious to tell his symptoms, is apt to be labeled a "neuro." We are prone to discount a great many of his statements, and this may be necessary to some extent for their proper evaluation, but care must be taken not to close our minds to the illness which may underlie the smoke-screen of words.

The importance of a history in case of accident, or in case of acute illness, may not be great, but its value in chronic illness cannot be overestimated. A good family history, a history of previous accidents and acute illness, are of distinct value, and a history sheet should have a printed outline to be followed so that these points will not be overlooked. It takes tact and persistence and a broad, general knowledge of medicine in many instances to elicit the points in the general history which may lead to the diagnosis.

NEWS NOTES & ANNOUNCEMENTS

The Return of Dr. Lazarus From Europe.—Dr. D. Lazarus, who has been in Europe doing special work, will return late in July and resume his practice in New York City. We hope to have an interesting article from Dr. Lazarus giving a résumé of his personal experiences and views on European conditions in general.

The Trend of the Times.—Harvey Cushing gives a whimsical and withal very accurate survey of the tendencies of our times (*Surg., Gyn. and Obst.*). He states: "We have seen that the present trends affecting the physician and surgeon are, on the one hand, toward preventive medicine and good nursing, which lessen the importance of drugs in therapeutics; on the other, in surgery, an ever-increasing subdivision and specialization which tend to

magnify the importance of mere handicraft. Prevention, it is true, can also be applied in surgery. Many industrial accidents can be prevented; the rule of safety first can be followed; there would be no more gunshot wounds if firearms and war were abolished; if we can finally stamp out tuberculosis and eliminate cancer there will be far less for the surgeon to do. If women did not have children, if people did not drink, if we could only keep the policeman off his feet, the housemaid off her knees, the miner off his elbows, the aviator out of the air, the boys away from football; if all children in goitrous districts were given a little iodine, there would be less need for the surgeon. But we do not yet live in the Isle of Utopia, and however much the need of the physician may be lessened thru the agency of preventive medicine, by eliminating disease as typhoid has been largely eliminated, and yellow fever, and as malaria can and will be, and many nutritional disorders and perhaps goiter, the surgeon will continue to be needed and I cannot see but that he must become a better and better physician."

The Incidence of Blindness in England.—According to the *Medical Press* (December 6, 1922) there were 34,890 blind persons in England and Wales in the beginning of 1919. A grouping according to ages brings out the significant fact that among 25,840 of these not less than 21 per cent. were blinded within the first year of life. Thereafter the number was increased by almost exactly 10 per cent. for each decade of life up to 70 years.

An Appeal for Information on Maternal Welfare.—The Committee on Maternal Welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is anxious to procure accurate information as to the progress which each state is making in the matter of maternal welfare in order to formulate a report for our annual meeting in Philadelphia in September.

A preliminary program was published in the issue of the *American Journal of Obstetrics and Gynecology* for June, 1923, which it is hoped may be a suggestion of an outline for national work among all organizations which have a common basic line of endeavor including medical societies, departments of health, and commissions of social workers.

We shall be under many obligations if you will be kind enough to send at your early convenience a brief synopsis of the results accomplished in your state and most important if possible a contrast of the record of the clinics or regions where patients have been privileged to have pre-natal care with the statistics of the community in general where no supervision has been afforded the prospective mothers.

These it is planned to have incorporated into the completed survey to be presented to the

Association and to be published in the Annual Transactions later on.

Dr. Henry Schwarz, St. Louis; Dr. George W. Kosmak, New York City; Dr. George Clark Mosher, chairman, Kansas City.

A New State Commissioner of Health.—Another proof of Governor Smith's good judgment was seen in his selection, on July 12, of Dr. Mathias Nicoll, Jr., to be State Commissioner of Health, the post so ably held by the late Dr. Hermann M. Biggs.

Dr. Nicoll has been with the department for the past eight years and for the past four years has been Deputy Commissioner. Prior to that time he was Secretary of the Department and Director of Public Health Education. Before he came to Albany he was associated with Dr. Biggs and Dr. William H. Park in public health and laboratory work in the New York City Department of Health.

Dr. Nicoll received his medical education at the College of Physicians and Surgeons of Columbia University and, specializing in pediatrics, was for many years attending physician at the New York Foundling Hospital, the New York Infant Asylum, Seton Hospital, Willard Parker Hospital and Bellevue Hospital. Later he served for six years as assistant director and chief of the division of diagnosis in the laboratories of the New York City Department of Health.

In 1914-15, in collaboration with Dr. William H. Park, director of the research laboratory of the New York City Department of Health, Dr. Nicoll demonstrated by a series of experiments on guinea pigs that the value of tetanus antitoxin in the treatment of lockjaw was greatly enhanced when injected directly into the spine. Subsequently in a series of lockjaw cases occurring in and about New York City the value of this method was fully proved. Since then the intraspinal use of tetanus antitoxin in the treatment of lockjaw has been generally accepted as giving the greatest chance of recovery.

Dr. Nicoll is a trustee of the State Hospital for Tuberculosis at Raybrook, a Fellow of the New York Academy of Medicine and of the American Public Health Association. He is the author of many scientific articles on infectious diseases, laboratory research and public health administration.

The Growing Menace of Noxious Gasses From Automobiles.—That carbon monoxide emitted from automobiles constitutes a very grave menace to the health of the people in large cities, is a growing belief among those who are studying the problem. Dr. Yandell Henderson, Professor of Applied Physiology at Yale, who recently made an investigation of the automobile fume nuisance, at a recent meeting of the New York Academy of Medicine, stated his studies had convinced him that there was ample

reason for believing that carbon monoxide is largely responsible for the extreme fatigue felt by New Yorkers at night.

Dr. Henderson was enabled to make a thorough study of the effects of carbon monoxide in the streets, tunnels and garages by a fund placed at his disposal by the Academy's Committee on Public Health. He based his talk recently upon the report he had made to the Academy.

Sixty per cent. saturation by the gas, said Professor Henderson, causes unconsciousness, and a saturation of about 80 per cent. causes death. Altho, he asserted, life insurance companies denied that carbon monoxide was a cause of tuberculosis, physicians connected with the companies believed they could attribute the disease, in some instances, directly to the inhalation of the gas.

Time, he said, was an important element in the poison's effect. While New Yorkers, who walk in congested streets where the auto traffic is great do not necessarily become very sick, it was the speaker's opinion that they are distinctly more tired at night than they would be if they avoided these thorofares. He suggested the use of vehicle exhaust for the large vehicles such as busses and trucks so the gas would be thrown upward. These "chimneys" were in use by a New Haven bakery firm, said Professor Henderson, to keep the cakes and pies in the car free from poisonous fumes.

Dr. Royal Storrs Haynes, chairman of the Committee of Sixty of the Academy, announced that as a result of the campaign for \$250,000 for the institution's new building at Park Avenue and Sixtieth Street, \$316,591 had been collected. Dr. Haynes said that almost 90 per cent. of the resident Fellows of the Academy subscribed to this fund and that 82 per cent. of the general members throughout the country sent in their checks. The cost of the campaign, said the chairman, was \$6,617, which is being borne by a committee of physicians.

Public Schools Health Day in November.—On April 25, 1923, the Board of Education approved the recommendation of the Board of Superintendents, that a "Health Day" be held annually, in every elementary school of the City of New York, on the first Thursday in November.

On this day each year all academic work is to be suspended, while and until all children are tested by their respective teachers, for acuity of vision and observed for evidences of defective hearing, defective teeth, nasal breathing, malnutrition, and any other physical defects.....

The success of the three "Health Days," held respectively in November, 1920, March, 1922, and November, 1922, in cooperation with the Department of Health, has proved beyond all doubt the usefulness of the teaching staff, as a fundamental feature in the health supervision of our school children. In recognition of this fact, we learn from the city's Health Department weekly Bulletin, June 16, the Board

of Education has authorized the holding of a "Health Day" annually, in every elementary school in the City of New York, on the first Thursday in November.

Hudson Towers: A Combination Hotel Hospital.—The American Bond & Mortgage Company has announced an issue of bonds for a building to be called Hudson Towers and located at Seventy-second Street and West End Avenue, New York City. The building is to provide a combination of a modern hotel with features for the needs of physicians and their patients. In addition to a large dining room there will be 358 chambers, 81 special rooms, 211 baths and 12 public baths. Among the physicians associated with the project are Drs. Joseph A. Blake, Evan Evans, John F. Erdmann and Adrian Lambert, and there are seventy-four other physicians in the advisory council. It is stated that the entire staff of the Hudson Towers will be required to carry out the wishes, instructions and orders of a patient's physician or surgeon. There will be Roentgen-ray, chemical and pathologic laboratories. Operating rooms will be equipped with facilities to meet the most modern requirements.

Physicians' Licenses to Prescribe Liquor and Alcohol for Medicinal Purposes.—On May 18, Commissioner D. H. Blair, of the Internal Revenue Department, issued Treasury Decision 3398 authorizing the prohibition directors of the several states to issue basic permits to physicians without reference to Washington.

This decision should speed up the issuance of permits in the future and should to a very large extent eliminate the annoying delays which Ohio physicians have been subjected to in the past. The new order follows:

1. Directors are hereby vested with the same authority as that given the Commissioner by Article III of Regulation 60 as amended by T. D. 3398 to approve or disapprove applications for, and to issue, the following basic permits:

"(1) Permits to physicians to prescribe
"(2) Permits to physicians to use intoxicating liquor

"(3) Permits to dentists and veterinarians to use alcohol

"(4) Permits to transport by truck and the procedure relating to such applications and permits will correspond with that relating to basic permits by the Commissioner.

2. Applications on Form 1404 may be acted upon by the Director without making an inspection, where the Director has evidence justifying his action without inspection.

3. Treasury Decisions 3288 and 3395 are in no way affected by the foregoing, and applications for increased quantities of liquor and for additional books of prescription blanks will be forwarded to and acted upon by the Commissioner as heretofore."



Special Article

NEW YORK SUMMERS AND THE STADIUM CONCERTS.

BY

CROMWELL CHILDE.

To all residents of American cities the problem of the "heated term" and the "vacation days," those when the average New Yorker, Chicagoan, Bostonian or Philadelphian can only get away for two weeks and for the rest of the period finds himself limited as to amusements, is being solved in a way that never could have been anticipated but is most gratifying. Summer open-air music of the highest class presented out-of-doors is gradually coming to the greater cities of the country, with New York and Chicago in the lead.

For the city resident and the visitor to the great cities during the summer these open-air concerts are becoming of inestimable value from the health viewpoint, for they provide for thousands quiet recreation in the open air accompanied by whatever of therapeutic benefit thoroly good music of the masters is of value from a medical standpoint.

It is in New York that the greatest of these out-door musical enterprises is being tried—the Stadium Concerts. Given in a great concrete half bowl, the amphitheatre of the College of the City of New York up on the tip of Manhattan Island, a structure open to the skies that can accommodate ten thousand people, these were organized five years ago, practically as a civic enterprise. That is, tho the city had no part in financing them, they were not from the be-

ginning in any wise a commercial proposition, and have always been carried on at a heavy annual deficit, made good each year by underwriters and subscribers from among the wealthy music-loving elements of New York. Begun by presenting very good music, they have been built up and evolved until this season, with the engagement of an augmented New York Philharmonic Orchestra of 106 men, with the renowned Dutch conductor, Willem Van Hoogstraten, holding the baton, they are offering at entrance fees that nowhere near pay the expenses, nightly programs for forty-two nights of the world's very greatest music—Wagner, Tschaikovsky, Beethoven, Bach, Mozart, and Grieg, to name but a few.

All kinds of people that are kept in town attend these Stadium Concerts, and unless the night be a stormy one, the audiences run anywhere from seven to eleven thousand. Countless of the foreign born of New York are among the auditors, many unable to speak a word of English, Poles, Russians, Jews of all descriptions and shades of faith, Czechoslovakians, Lithuanians, Austrians—very nearly all the nationalities of Europe indeed, with the exception of the Italians who are not interested in symphony music. And these Concerts are chiefly of symphony music, with symphonic tone-poems and suites and frequent excerpts from the Wagnerian operas included with them.

In addition the audiences have in them an increasingly large percentage of fashionable people from New York and other cities, who this season especially have come in such flocks with their costly Rolls Royces and other motor cars almost choking the streets surrounding the Stadium and making an increasingly difficult traffic problem.

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In Advance

Education and the Practice of Medicine.—Recent legislatures have made sundry attempts at legislative enactments inimical to the medical profession, but have been thwarted for the present. It is acknowledged that each session of the State legislature must be carefully scrutinized with a view to recognizing promptly efforts at legislation aimed to break down the standards of medical practice. Most of these attempts are by indirection, inasmuch as there are no overt measures to lower the requirements demanded of practitioners in medicine, but rather the establishment of lower educational requirements for those desirous of legalizing numerous cults now existent, but not universally recognized.

J. W. Kennedy (*New York Medical Journal and Medical Record*, May 16, 1923) states his opinion that the medical profession should endeavor to place the responsibility for death most intimately into the lives of the legislators who are determining the legislation that admits irregular practitioners into a legalized status. While this is probably a very difficult undertaking, the thought underlying it merits consideration. If irregulars, denying the existence and facts of the science of bacteriology and disregarding the accomplishments of sanitary science, are permitted to practice legally, the responsibility for all injuries to public health or personal welfare can be properly laid at the doors of the legislators who, for political reasons, rather than from honest convictions, cast their votes in favor of

educational standards far below those requisite for securing practitioners capable of offering an intelligent treatment of diseased states.

The medical profession at the present time seeks rather to raise the standards of the medical profession than to lower the entrance requirements. From the standpoint of fair dealing, it merely demands that the public be protected by requiring equally high preliminary education and scientific preparation to practice the art of healing from all those who would treat the sick, regardless of the system of therapeutics which they may avow. There are some who feel that the rights of the medical profession are invaded by opening the doors of professional practice to ignorant, untrained or unqualified practitioners. The harm to the profession is far less than that which ensues to the body politic. The so-called regular school of medicine has toiled ceaselessly for the elevation of its own standards not merely in the interest of professional standing, but in accord with the belief that the sick of a community are entitled to the highest type of skilled service, based upon the combination of cultural background and scientific training.

The point of view which condones two or more standards of medical education outrages public welfare, regardless of the isms and pathies of definite belief. In the absence of any questionable element of therapeutics, it is undeniable that capacity for making a diagnosis is a fundamental

in the training of those who would apply themselves intelligently to the cure of the sick. Any system of licensure which fails to take insistent cognizance of diagnostic ability falls short of adequate provision for safety.

But In the Face of Catastrophe—It's the Regular Practitioner!—It is striking and significant that in the face of catastrophe, epidemic, war, flood, earthquake or serious accident the tide of public opinion flows steadily toward the followers of regular medicine. The basic confidence in the regular practitioners of the art of healing is evidenced the world over. Enrichment of human life and the progress in lessening morbidity and mortality that have followed upon the earnest endeavors of physicians in all branches of medicine are adequately recognized and heralded, save in legislative chambers, when a lobbying group lifts up its voice for political recognition. The legislator little thinks of the triumph over smallpox, typhoid fever or malaria or the remarkable achievement in the control of yellow fever, diphtheria, cerebrospinal meningitis, syphilis and tuberculosis. His mind does not dwell upon the accomplishments of our hospitals, dispensaries and medico-social agencies, nor the excellent achievements of state and municipal departments of health. Satisfying the demands of an alleged constituent, with vote-getting possibilities, he assumes a serious significance in the light of which protecting public health dwindles in importance.

No system can be devised to awaken the public conscience of legislators more effectively than publicity. It would seem foolish to establish a medical lobby for the purpose of controverting the statements of those whose commercial interest seeks to dictate the terms of licensure on a plane of educa-

tional accomplishment scarcely equivalent to that found among graduates from high school. Respect for the health of the community should not be regarded as an essential obligation resting upon physicians more than upon legislators. Legislators have responsibility as well as power and should be guided and controlled by it.

It would be highly interesting and illuminating if each legislator were obliged to give a memorandum justifying his position when voting for a proposed law that would lower the standards of medical practice in any state, particularly when such lowered standards would legalize the methods of treatment of those who deny the existence of infection, the need of sanitation, or the worth of immunization. Instead of the medical profession being on the defensive to withstand attacks upon our educational standards in this State of New York, for example, the legislators should have thrust upon them the responsibility of defending their activities in behalf of those whose irregular principles contravene human experience and the consensus of scientific judgment thruout the world.

The medical profession should be in a position to challenge as a breach of good faith and political trust those legislators who, thru indifference, ignorance or political ambition, are willing to sacrifice the best interests of the citizens they have sworn to represent and protect. There can be no justification for the existence of a dual standard of educational qualifications for those whose aim it is to deal with the illnesses of their fellowmen.

Pregnancy and Heart Disease.—The relation of marriage and pregnancy to the handicap of heart disease is approached in

a most sane manner by W. W. Herrick, *New York Medical Journal and Medical Record*, May 2, 1923. The basic element in the discussion involves the recognition of the general truth of the saying, "Women with chronic cardiac disease bear matrimony and pregnancy well."

Accepting this dictum, it is patent that the burden of responsibility rests upon the general practitioner or specialist to be certain of his reasons before advising against marriage or consequent pregnancy. The mere fact of the existence of a cardiac lesion does not suffice to advise against either state. With a careful consideration of the symptoms, the physical signs, functional tests, and the nature of the lesion, a decision may be safely made, and reinforced by such necessary advice as may be indicated for reasonable guidance during pregnancy.

The most necessary factor for consideration after marriage is bound up in the continued balance of cardiac compensation during pregnancy. If decompensation occurs early in pregnancy, and without any special strain to cause it, it is probably wise to interrupt the pregnancy. If decompensation does not occur until after the fourth month of pregnancy, and there is a proper response to treatment, it is generally safe to allow the patient to proceed to term, with careful oversight.

The Necessity of Inducing Labor.— If therapeutic measures do not wholly or partially restore compensation, obviously further action is indicated. An induced labor may be necessary, but this induction should not be attempted until a thoro trial has been made of medical measures.

No general rules govern the decision to terminate pregnancy in individuals with

cardiac disease. If, however, it becomes imperative to interrupt pregnancy, the method utilized should be carefully considered. Cesarean section is rarely necessary, altho it appears to be well borne by the cardiac patient. It is preferable to prolonged labor, and at times more desirable than an *accouchement forcé* in advance of term. The most important element at the time of labor is the securing of a short and easy second stage. It is desirable that the heart be under the control of digitalis at the time of labor. If anesthesia is required, ether appears to be most satisfactory.

It is unwise to subject a woman with serious cardiac disease to the strain of repeated pregnancy. If one or more healthy children have been borne, the question of sterilization merits serious thought. This is accentuated by reason of the tendency of heart disease to become more serious as age advances. It is for this reason that Cesarean section in selected instances is to be advocated, so that sterilization may be accomplished at the time of this operative procedure.

Individuals with mitral stenosis are less able to undergo a successful labor than those having other valvular lesions. Patients with marked aortic insufficiency, particularly in the presence of high pressure, and evidence of left ventricular dilatation, should be discouraged to undertake the increased burden of pregnancy.

In general, patients who are dyspneic on ordinary effort, or evidencing a persistent cough of pulmonary congestion, or who have had attacks of the so-called cardiac asthma, anginal pains, or swelling of the feet, should avoid matrimony. These, however, represent evidences of marked decompensation and serve as warning signs of the lowered vitality that will lack the

protective resistance to the increased internal pressures developed during the second stage of labor.

In general, it may be said that the mere existence of cardiac disease does not constitute a bar to marriage, and in a great majority of instances does not suffice as a reason for forbidding the natural consequences of marriage. Creating an unwarranted fear of pregnancy as a condition of marriage is to be deprecated. Conservative judgment and counsel are adequate to present the facts without exaggeration or overoptimistic guarantees.

Convalescent Homes.—The importance of convalescent care has created a difficult situation for many hospitals, who, recognizing the need thereof, lack the facilities for making the essential arrangements. The average period of time that patients remain in the hospital for acute diseases is from eighteen to twenty days, and this is in marked contrast with the actual time required to assure the restitution of the patient to normality.

John Bryant, M. D. (*The Boston Medical and Surgical Journal*, April 26, 1923), quotes Armstrong as estimating that of the 31,334 patients discharged from Bellevue Hospital in 1906, probably 44 per cent. were not fit to work and possibly 30 per cent. were in need of actual further treatment. And, furthermore, that whereas 20 per cent. of the patients from English institutions were sent to convalescent homes, but 10 per cent. of the patients from the Massachusetts General Hospital, at the time of writing in 1908, were sent to the Waverly Convalescent Home.

There is no doubt that institutions for convalescent care represent a sound eco-

nomic policy. The cost of administration is far below that needed to maintain a hospital for acute diseases. Furthermore, a hospital system that does not make provision for convalescent care is responsible for fostering a large class of individuals who, discharged half cured, may lose in their vitality and interest, so as to become objects of public relief and, indeed, permanent dependents. For this type of patient there can be no defense today. The convalescent home, in many senses, is the economic antidote for the home for incurables. In a broad sense, the curative effects of proper convalescent care may be definitely assigned a place in the field of preventive medicine.

The convalescent home is not merely an institution to promote the complete recovery from physical ailment, or a shelter to make amends for the shortcomings of the home, or an agency to prevent overwork of debilitated individuals. It, in truth, possesses a highly special function for re-educating and rehabilitating individuals whose bodies, minds and souls have been in conflict with the destructive forces and agencies that are termed disease. Mere physical recovery does not constitute, necessarily, psychic regeneration, nor does relief from the debilitation of delirium effect bodily adjustment.

According to Brown, of the Burke Foundation, 60 per cent. of the surgical and 40 per cent. of the medical patients in acute hospitals require organized convalescent care, of which number from 20 to 30 per cent. would be eligible for a convalescent home. The values of rest, good air, simple food, exercise, massage, amusement, diversion, recreation, companionship, stimulation, counsel and guidance are thoroly appreciated. They constitute the simple ele-

ments which make the factor of safety in convalescence.

There is a tendency at the present time to agitate the need of special convalescent care for children suffering from heart disease, malnutrition, anemia, secondary to contagious diseases, and various other forms of debilitation from specific medical causes. Hence there have arisen numerous types of convalescent homes, designed to meet these particular problems. This, undoubtedly, is one method of securing essential institutions. It lacks, however, the broad vision which views convalescence as a definite phase of restoring the sick to normal function, instead of a patchwork arrangement of particularized homes. More is to be gained by a well-considered program designed to meet the convalescent problem in its natural relation to hospitals, dispensaries, health centers and social service organizations.

The convalescent home should be an extension of hospital interest and guidance. In the arrangement of any program for meeting the needs of convalescents, the hospital might well be considered the nucleus of effort. The medico-social machinery requisite for developing an adequate convalescent system might properly radiate from large hospitals, with their numerable associated dispensary services and elaborate plans of social service follow-up.

It is undoubtedly true that thus far the ideal scheme has not been proposed in a practical form. The rapid rise of interest in convalescent care since the period of the war has resulted in feverish haste to create small institutions for special purposes. In consequence, there is an inadequacy in the plans devised, as well as a lack of the essential working machinery necessary to promote a rational objective.

Convalescence forms a phase of illness

and, from the social standpoint, merits cautious inquiry as to the best fitting methods by means of which it may be utilized constructively. The convalescents are not to be regarded merely as those suffering from rheumatism or heart disease, but include those who have had the diseases requiring surgical intervention, and those with temporary mental derangement, convalescents from acute illness and non-tuberculous diseases, with potentials for more serious difficulties, merit equal consideration. The entire range of human life, where the physical, mental and moral stability has been impaired, constitutes the wide field for convalescent service.

An extensive program must be designed to meet the needs of men, women and children, irrespective of color and creed, with a point of view based upon social justice, economic salvation and human interests.

Hospital Cooperation.—In the *Journal of the American Medical Association*, April 21, 1923, E. M. Bluestone presents a letter discussing "Cooperation Between Hospitals and General Practitioners," which, while serving as a defense of the closed hospital, seeks to break down the spirit of distrust which is alleged to exist among private practitioners, with regard to hospital and dispensary ideas.

From this letter, however, one gains the impression that he discusses the attitude of private practitioners towards ward patients, whereas, primarily, the private practitioner is more concerned with this problem, insofar as it involves those able to pay for treatment in private rooms. In his statement, "The family physician constitutes the backbone of medical practice as regards the poorer members of the community," the word "poorer" might properly be elim-

inated, as the hospital problem is one that involves all classes of patients, and the family physician may be said to constitute the backbone of all medical practice.

There is a plea, "Fairness to the patient demands that the physician obtain for him the counsel of men who work in the more favorable environment, who are better trained, and whose judgment is more mature." This sentence is open to numerous objections in that many patients are sent to hospitals, largely to secure the benefits of intelligent nursing and favorable facilities for treatment, without any admission on the part of the physicians sending them that all the members of the hospital attending staff are better trained or possessing more mature judgment. Not infrequently, the family physician to whom the experience of the hospital is denied, has better judgment and maturity, and possibly superior training, than the member of the hospital staff who treats his patient in the ward, or to whom, perforce, he must recommend his patient, in order to have him admitted to a private room in the institution.

It is admitted that in general unauthorized relations have developed, so that family physicians are given the privilege of calling upon their patients, and at times prescribing for them, with the consent of the regular member of the hospital staff. The fact that this practice has grown up does not, however, indicate it to be part of hospital rule. Nor does it evidence a willingness upon the part of the hospital, itself, to afford opportunities for family physicians to preserve their familial relationships and retain the confidence of those for whom they feel compelled to give the advantage of the superior opportunities of hospital service.

Dr. Bluestone properly emphasizes that, "The practitioner is a neglected factor in the proper handling of the case by hospital

authorities," and his suggestions for improving the situation merit commendation. In order to present a practical plan for fostering a better type of cooperation, he makes the following valuable suggestions: "When a patient is referred by a physician to the hospital, it should be obligatory for the hospital (1) to inform him of the disposition of his patient; (2) to ascertain from him his version of the previous history; (3) to invite him to the wards for the purpose of acquainting him with the hospital findings; (4) to notify him of operation or necropsy, and (5) to notify him when his patient has been discharged."

Carrying out this proposed method will undoubtedly increase the good will of the practitioner and stimulate a more cooperative attitude. It is doubtful, however, whether a policy of this type would "put the physician on his mettle," or lead him to believe that the hospital was breaking down the barriers that he deems to exist in the closed hospital. On the other hand, the effort to bring into closer touch the hospital staff, equipment and technic, and the general practitioners, would be of inestimable value. It should redound to the advantage of all the sick in the community served by an institution having this definite consciousness of responsibility for fair play to the physicians, and should make possible a better service to patients.

As Dr. Bluestone frankly comments, he is not to be interpreted as making a plea for the "open hospital," but merely as offering a plan for making freely available to the outsider the training and experience of hospital staffs. Recognizing the proposal, therefore, as one fairly definite and designed to promote more friendly relations within the profession, while at the same time achieving more complete knowledge concerning hospital patients, and raising the

technical standards of the medical profession, it may be regarded as a desirable and progressive point of view. In the consideration of many phases of public health services, there is criticism of the profession, wherefore it is all the more important to have some evidence of an appreciation of the internal obligations, that fully recognized, would decrease the friction and discontent within the profession. Progressiveness, social thinking, and cooperation are required also within the profession. This projected plan evidences sound psychology, reasoning, and foresight. It does not, however, solve the problems of the "open" or "closed hospital," but then it makes no pretense of so doing.

Heredity and Environment.—In the London letter, appearing in the *Journal of the American Medical Association*, June 23, 1923, there is a reference to Professor Carl Pearson's recently completed investigation concerning health and intelligence.

While there is a tendency for many to regard athletes as less capable in formal educational subjects, and too frequently distinctions are drawn between athletes and students, statistical study appears to suggest that the relation between intelligence and success in athletics evidences some degree of correlation. It is obvious that motor dullards and slow thinkers are unlikely to be of the quick reactive type, whose capacity and judgment would make them leaders in sports. A considerable degree of athletic prowess is dependent upon physique, inherent power, and a temperament that enables its possessor to struggle gamely for a goal. It is not to be expected that all athletes possess a superior cerebral endowment, as this would be exacting a standard

of mentality far above the normal for all individuals in schools and colleges.

If the curve of distribution of mental power among athletes is similar to that existent in the general population, there would be no evidence of specific relation between athletic and intellectual capacity. Obviously, in secondary and collegiate schools, there is a considerable elimination of individuals with inferior intelligence quotients, as a result of which, patently, the curve for athletes, as well as for general students, shows a higher distribution of those with above normal attainments. This makes it necessary to compare the intellectual status of the athletic group only with the distribution curve of the non-athletic group.

Under these circumstances, with the growing tendency of more physiologically immature students to enter secondary schools and colleges, the athletes, as a whole, present a considerably lower peak at the extreme right than is found among the group of larger numbers, who are physically incapable of entering into general athletic sports. To the physiologically immature must be added those who suffer from physical handicaps that make their participation in sports impossible. Hence the comparative statement at once involves a marked differentiation of the two groups. Despite all these factors, however, Pearson claims that there is a fairly definite, tho weak, relation between athletic power and intelligence.

The Correlation of Health and Intelligence.—In general, it has been recognized that physical growth and development, with health, appear to be correlated with intelligence. Further, it has been urged that modifying conditions of health tend to improve intelligence. According to Pearson, the correlations between health and intelli-

gence are not as marked as had been accepted. And it does not appear feasible to improve intelligence by raising health standards. He suggests, therefore, that both health and intelligence are innate characters, whose degree of excellence is determined mainly by inheritance.

Recognizing the distinction between existent potentials and their manifestations, this does not appear to be as hopeless a situation as would be indicated by the thought that both health and intelligence are controlled by hereditary factors. Certainly, raising the health standards of individuals releases obstacles to the normal functioning of intelligence. Developing mental power along rational lines affords superior opportunities for physical self-control and for guiding the body in the performance of its functions.

While it is undoubtedly true that general intelligence, temperament, and many other psychic characteristics remain reasonably unchanged thruout the period of school life, as far as their basic nature is concerned, educational and social environment, together with physical training, bring about modifications as represented in conduct that promote individual effectiveness. They apparently transform, in part, the nature of the individual. It is for this reason that the teacher still possesses a tremendous field of usefulness. It is within his power to shape the metal that constitutes the strength of children. He, however, is but a single factor at the forge. Social influences serve as the bellows that work constantly while the educational triphammers pound away, conditioned in effect by the induced heat.

The acceptance of a doctrine that health and intelligence are merely determined by heredity would lead to a comparatively futile outlook upon life. The experience of the past few years, in reducing the mortality

rates, in diminishing the number of handicaps, and in raising the general standards of health would indicate the degree to which environmental factors may function in improving health. It is hardly reasonable to account for all these developments upon the basis of inheritance. It is undoubtedly true that the levels of attainable health are determined by inherited factors, as is urged in consideration of the inheritability of tendencies towards longevity, or towards susceptibility to various diseases. Under these circumstances, however, it is necessary to evaluate the social, economic and accidental elements which are constantly acting as forces that tend to modify inherited trends.

If the factor of inheritance could be established as a constant, with environment as a variable, the explanation of progress would become less difficult. At the same time, considering environment as a constant, and heredity as a variable, the appreciation of familial differences becomes more intelligible. The general experience of life appears to indicate that both heredity and environment are concomitantly constant and variable, and hence arises the marked complications in statistical analysis, with the resultant philosophic interpretations.

Certainly, in the wide field of health, one is constantly forced into doubts as to the relative position that is to be given to these two elements in interpreting particular phenomena. It is for this reason that some question the influence of sanitary science upon the reduction of tuberculosis and the decline of various diseases. On the other hand, one would have to be mentally astigmatic to fail to recognize the part that immunology has played in reducing the incidence of diseases, such as smallpox and typhoid fever.

It is because of the multiplicity of interesting problems that are constantly raised

in the analysis of medical facts and theories that one finds peculiar interest in the conclusions of those who lean towards a belief in the superior powers of hereditary factors. The eugenist has much to support his contentions for improving the racial stock, but the practical phases of his problem constitute almost insurmountable barriers. In the meantime, the euthenists are busily engaged in releasing the race from many of the fetters which bind, deform, and imperil it.

The Decline of Infant Mortality.—

The *American Child Health Association* has issued its fourth annual tabulation of infant mortality statistics from cities of over ten thousand population. It has thus continued the valuable work originally instituted and carried on for many years, by the New York Milk Committee. The report contains reasonably accurate figures for six hundred and thirty-five cities of the United States, whose population in 1920 exceeded ten thousand. The facts are presented on the basis of the death registration area of Continental United States, which is composed of the thirty states and the District of Columbia, that are also included in the Birth Registration Area, together with seven other states and thirteen cities in non-registration states.

The report covers one hundred per cent. of the cities in the birth registration area, with a population of over fifty thousand, and one hundred per cent. of other cities in the death registration area, with a population of over one hundred thousand.

It is striking that Washington, Oregon, California, and Minnesota possess the lowest urban infant mortality rates. Among the southern states the rates are much in-

fluenced by the colored population, as in many cities there appears to be little record of effort to secure registration of colored births and the recorded infant deaths greatly exceed the reported births.

A very marked change is noted in that during previous years cities of over two hundred and fifty thousand population have had the lowest mortality rates, while this year cities between twenty-five thousand and fifty thousand have the lowest rates. All the cities grouped by population are in a very reasonable agreement for their grand totals, the maximum being only 83.6, while the minimum is 77.7.

There is a tremendous significance in the reduction, because it is now, indeed, comparatively rare to find infant mortality rates above one hundred and twenty-five. The lowest mortality rates in the birth registration area recorded for 1922 were for cities with a population of from ten thousand to twenty-five thousand—Braintree, Mass., 24; Columbus, Miss., 25. The highest of the four lowest infant mortality rates in each urban population group was only 76. The highest recorded rate was 202, in Bristol, Rhode Island, far above the next city with heavy infant mortality rate, Newbern, North Carolina, 168.

The status of large cities above two hundred and fifty thousand, varies from 49 for Seattle to only 103 for Buffalo. In the cities with a population from one hundred thousand to two hundred and fifty thousand, the rates range from 61 for Grand Rapids, Mich., to 143 for San Antonio, Texas. In the cities with a population from fifty thousand to one hundred thousand the rates varied from 37 in Berkeley, Cal., to 129 in Pawtucket, Rhode Island, and Charleston, South Carolina.

The occurrence of a large number of in-

fant mortality rates below 60 yields ample evidence of the tremendous advance that has been made in overcoming the horrors of infantile deaths. It represents to a large extent the progress that has been made thru the more general adoption of Pasteurization of milk, the opening of infant welfare stations, the inauguration of prenatal care, and more effective education concerning infant feeding. The reduction is a tribute to organized medicine, as reflected in the splendid services of state and municipal departments of health working thru and with numerous private and semi-public agencies.

To only a slight extent does this tremendous reduction of infant mortality represent the work of private practitioners, save insofar as they have allied themselves to the work of safeguarding infant life by working with constituted authority. This is not merely an indication of progress and sanitation, but of the fulfilment of the promise of preventive medicine as applied to the specific problems that arise from conception until the end of the first year of life.

Incidentally, it may be remarked that the various efforts that have been made and are still being carried out in foreign lands for the protection of infants are patterned, for the most part, upon the methods that have been best developed in the United States, even tho some of the original work in this direction was developed in France, Germany, Belgium, England, and New Zealand.

It is very doubtful whether one may accept as satisfactory infant mortality rates above fifty, as there is ample evidence that reductions below this point are becoming more common. Insofar as cities possess mortality rates above one hundred, they are to be challenged as failing in some part of the technic of infant protection. Physicians should seek to popularize the facts concerning the infant mortality rates of their re-

spective communities, with a view to acquainting taxpayers with their importance. Further, where the infant mortality rates are higher than one hundred, there should be an effort made to arouse sufficient interest among the public to secure the introduction of those methods for protecting infant lives which have produced more satisfactory results in other communities.

There should be no need of a prize to stimulate communal interest in the reduction of infant mortality, as the lives of infants, themselves, constitute the finest form of communal benefit.

With the institution and development of the machinery at present known and available, there would appear to be little reason why any city should possess an infant mortality rate above one hundred, unless some unusual epidemic, either in extent or virulence, should counteract the methods that may be employed. Those cities with infant mortality rates between fifty and one hundred might well set fifty as their goal, and those with rates between twenty-five and fifty, should strive to attain the minimum thus far recorded. Each year's goal should be a lower rate than ever before attained.

If there be truth in the statement that the infant mortality rate may be regarded as a reasonable index of urban civilization, there is ample evidence that much remains to be accomplished. Far more does it represent the civic conscience of a community, rather than its degree of educational advancement. The progress and enlightenment of communities are evident in the rate and their tendency to achieve lower levels thru the conscious application of modern methods. The power of life and death over infants is in the hands of the constituted authorities for health and education.



The Latest Thought on Tuberculosis as a Preventable and Controllable Disease.—

Pulmonary tuberculosis is, on the whole, the most prevalent and deadly disease of the world. While it takes the greatest toll of human life in civilized countries, unlike cancer, it is both rife and deadly among some more or less primitive races. Perhaps the greatest advance has been made in the prevention and treatment of tuberculosis in America. A very instructive discussion took place in the Tuberculosis Section of the British Medical Association, the meeting of which has been held recently. The subject of the discussion was the social aspects of tuberculosis, with special reference to infectivity. Dr. Jane Walker, the medical officer in charge of one of the big sanatoriums for tuberculosis in England opened the discussion. Among other things she pointed out that the disease in England caused 50,000 deaths a year and that each year there were about 250,000 cases. In England the mortality had been decreasing for the past 120 years, in much the same way as the general death rate had fallen, largely owing to an improved standard of living. However, Dr. Walker appears to regard the disease as a penalty we paid for our civilization and added the equivocal remark such as it was. The speaker went on to say that the dictum that no big eater ever became consumptive was substantially true and pointed to the desirability of seeing that the people's food was abundant, of the right kind and as cheap as possible. The fact that the disease in England had become commoner among women during the war seemed to show that it was largely an industrial disease. Dr. Walker declared that it was within the power of tuberculous persons in all except the very latest stages of the disease to keep themselves from being dangerous to the community. She also expressed the opinion that in cases suspected as originating from milk it often came from the milkers and other people deal-

ing with the cows, rather than from the cows. She insisted that the fear of infection from milk was groundless or that we should come back to that point of view. Whatever else seemed uncertain, and there was a great deal still unsettled, the fact that tuberculosis could be conveyed from person to person was undoubted. Dr. Batty Shaw, on the other hand, said that tuberculosis was spread chiefly by tuberculous milk and by those suffering from the disease. The essential thing was to segregate those who were liable to give infection to children.¹ By eliminating tuberculous milk and by segregation, tuberculosis, both bovine and human, could be stamped out. In cases of pure tuberculosis there was no more danger of infection than there was in the case of tuberculosis of the joints. Dr. Shaw laid stress upon the point that it was necessary to shelve the belief that a tuberculous subject

¹In this connection, it is interesting to note the increasing recognition of the importance of removing children from homes, in which some member has tuberculosis. One of our New England States—Vermont—has taken an advanced step in regard to this phase of the tuberculosis problem, and has established an institution known as the Caverly Preventorium, the name commemorating the splendid work done for so many years by the late Dr. C. S. Caverly as President of the Vermont State Board of Health. This Preventorium, which is under State direction, is designed to take children of low vitality who are being exposed to tuberculous infection in their homes, and by suitable feeding, hygienic training and general medical care aims to build up their vital resistance and develop as far as possible the natural forces of immunity. Cases of frank tuberculosis no matter how early are not accepted, for as the name implies, the institution is intended solely for those children whose heredity and environment predispose them to the disease, but who can be kept from becoming tuberculous by removing them from the danger of infection and giving them proper care. In other words, its purpose and work are devoted exclusively to prophylaxis and it is a Preventorium pure and simple, as its name indicates. Much interest is being taken in this splendid undertaking and Vermont deserves great credit for being a pioneer in this advanced movement.

discharging tubercle bacilli could infect adult neighbors with tuberculosis of the lungs. Human tuberculosis was initiated in childhood, the sources being neighbors who were discharging tubercle bacilli and the scheme of segregation was not as impracticable as that of treating at great expense persons who were discharging no tubercle bacilli without being sure that they were suffering from tuberculosis, and at the same time asking persons who were discharging tubercle bacilli to go to infirmaries, which they would not go to, or to remain in their own homes, which they were willing to do, tho by so doing they would infect their children. Dr. Shaw concluded by stating with emphasis that persons who were infected with pure pulmonary tuberculosis were not dangerous to their neighbors because they did not discharge bacilli. Infection was transmitted by those suffering from mixed infection. The profession had been working on wrong lines. It had been assumed that all changes in the lungs of those expectorating tubercle bacilli were due to the bacillus, but it had never been proved that pneumonia and the excavations of the lung were tuberculous in origin. Experiment flatly denied that the tubercle bacillus could cause pneumonia of the cavity formation. As may be gathered from the views of the authorities quoted above, the means by which tuberculosis is disseminated is still a question far from being settled. Dr. Walker asserts that milk counts but little in the spread of the disease and that personal transmission is undoubted. Dr. Walker asseverates with equal conviction that milk is the chief means of spread, but that tuberculous persons discharging tubercle bacilli do not infect adults and that infection invariably takes place in childhood. According to authoritative current opinions on the subject both of these statements are too dogmatic. Milk does spread tuberculosis and adults may be infected by those discharging tubercle bacilli, that is, under certain conditions. At the same time, children who live in close proximity to persons suffering from the disease in a discharging form are most liable to become infected—children, for instance, living with an infected parent or infected brothers or sisters. As Dr. Shaw truly says, segregation of such persons should be demanded in the cause of public safety and as one of the only measures whereby tuberculosis can be eliminated.

Dr. Shaw's theory that the only ones who discharge bacilli are those with a mixed infection is very interesting and should be investigated closely. After all, it seems now that the sole method of attempting to extirpate tuberculosis with any great chance of success is by preventive measures. Sweep away slum areas in big cities and in industrial districts. Build well-lighted and sanitary houses in which the working classes may live and healthy factories and workshops in which they may work. It must always be borne in mind that light and fresh air are the great enemies of tuberculosis, light especially. Light, airy houses and good food will probably go further to abolish tuberculosis than any other measures. Sanatoriums have been tried and in some ways have been found wanting. Prevention along these lines and segregation for those in the discharging state should be the slogans in the campaign against tuberculosis.

Parliament's Prohibition Joke.—By a vote of 184 to 128 the House of Commons on May 9 voted in favor of the first reading of a bill requiring all liners entering British waters to have sufficient quantities of beer, wines and spirits on board to meet "the reasonable requirements" of the passengers. The result of the vote was acclaimed with cheers. In submitting the bill, Lieutenant-Colonel Courthope, its sponsor, said: "America's domestic legislation does not concern us. But when America seeks to extend the area of that legislation to the high seas, it is time for us to take action." The bill is a response to the newest burlesque of the law which will forbid any vessels from bringing within the three-mile limit of the United States any liquor, whether it is brought as part of the medicinal stores prescribed by British law or as the crews' rations insisted upon by French law. The bill comes up in the House of Commons rather in the form of a joke and it is not at all likely that it will survive a second reading, but the mere fact that it came up at all is ample evidence of the ridicule to which America has been once more exposed by the absurd but inevitable pursuit of the prohibition farce to its logical conclusion. From the legal point of view, the decision cannot be attacked, being thoroly sound. It is the familiar case of a logical conclusion

from a false and thoroly absurd premise. And the attempt to dictate to Europeans, who have a natural respect for their own laws, is not only absurd but impudent. Tho the House of Commons took up its bill of reprisal in the way of a joke, there is really no reason why, should Parliament really wish to make trouble, the bill might not be taken quite seriously. Our law, it would appear, can forbid foreigners from exercising their rights under the laws of their own country. Foreign law can therefore insist, with equal justice, that the privileges of foreign citizens be safeguarded against any hostile legislation by an unsympathetic nation. If visitors to the United States must adhere to the laws of that country, then visitors in Europe must likewise obey the regulations prevailing there. The fact that the American law is in the form of a restriction and that the foreign law is in the form of a privilege makes little difference. In Great Britain and France, the law recognizes the right of any man to drink to his heart's content without incurring any responsibilities unless he infringes on the rights of others. An American vessel entering a French or British port without liquor on board may be regarded as violating the inalienable rights of man, as guaranteed by the constitutions of these countries. European port authorities may, therefore, with a degree of justice equal to that of American law, insist that no ship will be permitted to enter the three-mile limit which denies its passengers the fundamental right to life, liberty and the pursuit of happiness as interpreted by the country to which it seeks access. And such a decision could easily be maintained legally. That Europe will not insist on this point is merely evidence of a realism which would recognize the absurdity of such a course—an absurdity which we seem to be able to veil under cover of a very debatable idealism. How long will we permit Europe to laugh at our expense?

at that time to assure his needs until death, the situation, as Dr. Doizy points out in giving specific examples, is distressing. Dr. Doizy cites the instance of one physician, now eighty-four years old, who before the war had enough to be able to contribute occasionally to a needy colleague, himself now applying for assistance to the Association. He did not make application personally, his pride not permitting, but he was not displeased when a friend, without his knowledge, informed the Association of his difficulties. Another case is cited of a doctor seventy-six years old, who declared that he was "broken-hearted" when the Association notified him that, according to the regulations, he could receive only 1,000 francs instead of the 1,200 he had hoped for annually. That a mere difference of 200 francs a year (\$12) can mean so much to a physician who gave his best years in the service of his community is a tragic circumstance that requires no comment. This doctor enjoys (the word is ironic in his case) an income of 4,000 francs a year. Before the war, that was \$800, ample tho not excessive by any means. Now it means about \$250 a year. It is easy to understand why \$12 less would mean serious discomfort and deprivation.

The figures cited by Dr. Doizy in respect to the relief activities of the Association are likewise impressive. Since the relief activity of the Association was started in 1874, pensions were allowed to a total of 593 doctors. In all, 2,527,950 francs had been dispersed in relief, in annual pensions of 1,000 and 1,200 francs. At the present time, there are sixty-eight doctors on the relief list, and the total amount spent on them annually is 74,600 francs, or less than \$5,000. At the general meeting seventeen new names were submitted for relief. If this is granted, the annual relief expenditure will amount to 93,000 francs, or less than \$6,000. This is about the maximum the Association can allow, in view of its means. There could not be a more effective revelation of the medical situation in France than in these paltry figures, both of the funds at the disposal of the Association and of the amounts granted to indigent members.

The meeting was a notable one in many respects, and especially because of the stirring address made by M. Paul Strauss, the French Minister of Hygiene, who drew attention to the important rôle the doctor may

The Case of the Aged.—In the case of young and active physicians, the hardships are not of a grave nature, for, if they have difficulty in keeping pace with the dignity of their profession, they at least are spared the privations of actual want. But in the case of the retired practitioner, who withdrew before the war with an ample income

fill as the collaborator of those entrusted with the direction of the State. "I am of those," said M. Strauss, "who have always insisted that the doctor should be the chief collaborator of public officers whose concern it is to promote preventive medicine and social hygiene. This union is possible, it is indispensable, and we should prepare for it."

Astral Influences on Health.—"It suffices for a man to raise his hands on the earth to change the intensity of gravity in Sirius, or, more modestly, to throw a stone into the Seine to raise the sea level at San Francisco." In thus expressing himself at the Académie des Sciences recently, M. Daniel Berthelot meant to assert that all parts of the universe are closely interdependent. Recent experiments by scientists and physicians seem to reveal an even closer interdependence than the ancients, who were the first to discover it, dreamed of. These experiments have demonstrated, to the satisfaction of the experimenters, that astral bodies and meteors exercise a very marked and direct influence on the nervous organisms of the humans who people the globe. It has come to be widely believed, for example, that there is a definite relation between the variations in the sun-spots and the consequent electric disturbances, on the one side, and the nervous disturbances in human beings on the other. Long ago Dr. E. Branly demonstrated that there was a great similarity between electric waves and nerve waves. The Abbé Moreaux, who demonstrated that there was a logical relation between solar activity, earthquakes and volcanic activity, observed that the maximum of such activity coincided with periods of war.

After a series of experiments lasting from January 7 to September 30, 1921, over a period of 267 days, the director of the Mont Blanc Observatory, M. Vallot, assisted by two physicians, Dr. G. Sardou and Dr. Faure, announced the theory, which they declared they had verified, that the symptoms of chronic ailments are influenced by meteors. While the director of the observatory noted the changes in the solar spots, Dr. Sardou at Nice and Dr. Faure at Lamalou observed the condition of their patients. The fact that the three men worked without consulting each other and

without comparing notes until the experiments were over gives special significance to the tests. When notes were finally compared, it was found that the passage of the meridian by the sun-spots coincided exactly with an increase in morbid symptoms and a general aggravation of other symptoms. The Académie des Sciences at its recent session gave considerable attention to these experiments and the general theory of the relationship between astral phenomena and psychic response. The field is a vast one, still unchartered, and leaving room for wide speculation. It would appear from the little that is already known that, in the near future, the physician will have to collaborate, not with the chemist, but with the astronomer. And an up-to-date doctor, on answering calls, will leave his grip behind and arm himself with the latest meteorologic chart. After a glance at the patient's tongue he will cast his eyes toward the heavens, but what he will be able to prescribe to defeat the machinations of the astral conspiracy against humanity still remains a problem. Perhaps he will be able to extract a lactic potion from the Milky Way and serve it with the Dipper.

Prohibition and Labor.—It would not be altogether fair to lay at the door of prohibition the blame for the reported increase in cases of alcoholism and the manifest increase in heavy drinking since the enforcement of the dry régime, tho it would not be difficult to maintain such a charge with impressive statistics. Prohibition is not alone to blame for this condition, which has been prevalent in Europe as well as here since the war. Heavy drinking, gambling on an unprecedented scale, and the dancing vogue which comes dangerously close to being a mania, were the symptoms of war hysteria and armistice hysteria which could be found in every country involved in the recent struggle. The ordered system of society, so painfully wrought thru the ages, having been revealed as utterly insecure and human life having been shown to be such a trivial consideration in the brutal march of events, it was natural that men all over the world should turn to the anodyne of alcohol, of games of chance, of dancing. But such a condition of things cannot last forever. At

some time humanity must, with its inalienable instinct for self-preservation, come to its senses and react against the excesses which, in the final analysis, bring only a factitious consolation. There are in Europe today many signs that this reaction has already set in, but unfortunately as much cannot be said for this country, where the excesses continue without diminution. And it is here that prohibition is very gravely at fault: it has delayed, perhaps defeated altogether, the natural reaction that might have come normally to a highly unnatural mode of living.

It is a significant fact that of all countries in Europe, France, in which there is the minimum restraint on drinking privileges and where liquor of the best quality is within reach of the most modest income, should reveal the most prompt and healthy reaction to the excesses that followed the war. The extent of this reaction is well shown in a report just issued by the French Ministry of Labor, after a thoro inquiry among all branches of labor in the country. The investigation was initiated in order to determine whether alcoholism is increasing or decreasing among the laboring classes in France, and overwhelming evidence was obtained of a marked and encouraging decline since the critical stage of the armistice. There was an amazing degree of unanimity in the reports received from the labor unions of the various callings. The building trades, for example, reported that the men drank much less, that there were hardly any Monday absences now, that the workers dressed better, were more regular in their hours and more efficient in their work, and that from a spiritual point of view there was a vast improvement. The carpenter trades reported a similar change. The painters' unions declared that dismissals on account of drunkenness were practically unknown now. And all reported that the men were saving more, that they were living more comfortably and enjoying life more. These reports must be read in the light of the special circumstance that they deal with a country and a population for whom liquor is plentiful, cheap and unrestrained by law; but, even without this consideration, it is safe to say that hardly more can be said of labor in this country, compelled to virtue, whether willing or unwilling, by statute. A well-known French sociologist, summing up the situation in

comparison with that in America, says: "The report of the Ministry of Labor illustrates in a striking manner the contention of the opponents of total prohibition. We know as a matter of fact to what degrading excesses American drinkers, deprived of harmless beverages, have gone. Statistics prove that extreme measures have brought disappointing results in America and that crime is on the increase in an environment where prohibition has led to the consumption of contraband alcohol of a vile quality. It is comforting to compare this condition with the happy effects of freely attained sobriety of the French worker. It is useful occasionally to reveal to the advocates of restraint the moral benefits of liberty."

Genesis of Neuro-Otology.—On his recent visit to America, Prof. Robert Barany, formerly of Vienna University, and now head of the Department of Otology at Upsala University, Sweden, made some very interesting addresses to various medical audiences thruout the United States. As everyone knows, it was Professor Barany who devised the labyrinth tests which were more or less painfully familiar to all aspirants for the aviation service during the war period, especially the turning chair, and irrigation of the ears with hot and cold water; but few outside of medical circles know anything of the origin of these very useful tests. As described by Dr. Barany, the evolution of his investigations is one of the romances of science, and such names as Purkinje, Ewald, Breuer, Mach, Flourens, Bolk and Ramon Y. Cajal are indissolubly associated with this fascinating subject.

A century ago it was customary to turn insane patients in a chair while confined in the tower of the old prison at Vienna. The purpose of this was to make the patients ill, and thus more readily to control them, but no one ever thought of looking at the eyes to see if there was nystagmus. It is curious how different are the conclusions of men having the same facts before them. For example, Purkinje made an exhaustive study of the cerebellum and came to the conclusion that we can never learn anything about the cerebellar control of body movements because the cerebellum is a sub-conscious or involuntary organ, and has noth-

ing to do with the higher, voluntary cerebral centers. Barany, on the other hand, with the same facts before him, said "that is precisely why we can find out something about the functions of the cerebellum," and he proceeded to establish certain basic diagnostic data therefrom.

Barany determined that the caloric reaction can be obtained in the sound as well as the diseased ear. This reaction, he said, is constant and definitely determinable. He studied the phenomena of changes in the position of the head which affects movements of the eyes, and was the first to describe the dependence of nystagmus on head position. He also differentiated this kind of nystagmus from other types. He theorized and then demonstrated that the caloric reaction is a result of endolymph movement. Altho the ears had been washed out with water by many physicians for years, no one had ever thought of watching the eye movements until Barany made a study of them.

Professor Barany is a man who has thought and studied much. In treating cases of chronic discharging ears he was accustomed to irrigate the attic with cold water. Being possessed of rather a poor memory, he made notes on some twenty cases and put these in his pocket for further study. In reading these over he was surprised to see that the use of cold water in the right ear gave both a horizontal and rotary nystagmus to the left. One day he had a patient who complained of the water being too cold. He upbraided the nurse for her carelessness and, becoming angry, she brought water which was very hot. On employing this hot water the nystagmus changed toward the side irrigated. This fact interested Barany very much and, consulting his notes, he found that he was able to set down the law that "irrigation of an ear with hot water produced nystagmus toward the side of the irrigation, while the use of cold water produced just the opposite, namely, nystagmus toward the other side." He tried out these irrigations on normal persons and found that, altho he had discovered a law, this law varied with the changed position of the head. Wishing to study the influence of the head at 180 degrees, he had the patient stand with his head down between his legs, while the observer

stood and watched the eye movements. He then irrigated and rotated the head on a vertical axis while watching the nystagmus.

Various movements of the eyeball stimulated Vienna eye specialists to study body movements also. Barany for a long time had been interested in the eye muscles, and one day he was invited to the eye clinic in Vienna to see a case of nystagmus who had been examined many times for past-pointing with his eyes open. Barany examined this man with the eyes closed and found that this same past-pointing took place. He then began to work once more with normal persons and discovered the laws of nystagmus in relation to past-pointing.

What now is the practical application of these principles? Very often if a patient has earache the general practitioner in attendance will advise irrigating the ear with very hot water. The patient becomes extremely dizzy and sometimes falls from the chair. In other words, the doctor has recommended, all unwittingly, the carrying out of a caloric test. This method of treatment should, of course, never be recommended, for water either too hot or too cold when used in the ear will produce violent dizziness, nausea and vomiting.

Then, too, the labyrinth reactions are of value in many cases where the ear specialists and nerve specialists meet on a common ground. It is sometimes possible to come nearer to a diagnosis by this means. The subject of the nerve paths in connection with the ear is still in its infancy. Error in diagnosis is always possible where lesions of the brain are concerned, but, according to Barany, correct diagnosis is possible in 85 per cent., and failure in only 15 per cent.

Finally, the work of Barany and his *frères* must eventually lead to exhaustive study of nerve impulses and of the vestibular nerve paths in relation to the central nervous system. Investigation of the control of balance and the effect on muscular movements is being worked on at the present time. The exigencies of war stirred up great interest in this subject and, consequently, we may expect to hear much more about it. Professor Barany has many pupils in this country who are also teachers and investigators of this absorbing subject.



LOGICAL SHAPE OF THE AUXILIARY INTERNATIONAL LANGUAGE.

BY

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The harm done to science by the application of many languages was lucidly exposed by the American Philosophical Society as far back as 1887 in its report on the scientific value of an artificial international language. The arguments brought forward in this report in favor of such an auxiliary language apply to no branch of science more closely than to medicine which is more in-

The need of a medium of communication of thought common to all nations is generally admitted. All those who have devoted painstaking study to the difficult problem of the auxiliary international language (AIL) agree also about another point, and this is that the language must needs be an artificial one. The following question now arises: Is it possible to determine logically the shape of the AIL and to make it thus independent of the arbitrary decisions of authors? Unless this question can be affirmatively answered, there will be as many systems contending with another for the rôle of the AIL as there are language inventors, for *tot capita, tot sensus*. Even if several states adopted officially one system, its stability would thereby not be secured. Some scientific body may find it inadequate, construct another system and make practical use of it. Another society may act in a similar manner, and in this way unity of the AIL would be frustrated. Only a language built in strict conformity with certain requirements and principles which every rational person must acknowledge will keep rivals off the stage after having been officially adopted by a few nations. Such principles do exist, they only need to be set forth clearly and comprehensively.

ternational than any other department of science. For this reason a discussion of the most important aspect of the international language problem is of great interest to medical men and a fit subject for a medical magazine.

The AIL should be very easy not only for linguists, but also for people of average education. With respect to the vocabulary this undeniable requirement can only be fulfilled by observing the principle of maximum of internationality and the *a posteriori* principle: the words of the AIL must be as much as possible international, *i. e.*, common to the principal living languages (principle of internationality), and if there be no international words for certain conceptions, the latter are not to be rendered by words arbitrarily invented, but by words taken from some natural language, living or dead (national words, *a posteriori* principle).

The objection that a language composed of international and national words would lack a uniform character, would be a *mixtum compositum* unfit for use, is refuted by the example of the most powerful, richest, and most expressive language, English, which is composed of Germanic, Latin, Greek, French, and other root words.

To be sure, Latin words are the most international ones, but not all Latin words are international (common to the principal living languages). Systems which would use

almost exclusively Latin for the sake of uniformity as *Latino sine flexione* and kindred devices, do not comply with the principle of internationality. Every word has to be examined as to its internationality, *i. e.*, the number of people on the earth is to be determined to whom the word is known, and of several words that one is to be selected for which that number is the largest. Words so selected would indeed offer the greatest facility to the greatest number of people on earth and conform to the excellent formula of Prof. Otto Jesper-

Jespersen's formula is grist to the mill of those who twaddle about Chinese as the international language to be selected. Apparently Chinese would offer the greatest facility to the greatest number of people on earth. Why then should the IL not be made to consist wholly or partly of Chinese? To this question Prof. Jespersen gives an excellent answer which may be quoted here in part (*Progreso*, I, p. 473): "The 400,000,000 of the celestial empire do not speak the same language. They only have the same written signs and these are read differently in Peking and in Nanking, just as the Arabic numerals are read differently by an Englishman and a Frenchman. A Chinaman traveling a few miles from his home may come among people whose spoken language he does not understand and to whom he can make himself understood only thru pencil and brush. The dialects and little languages differ vastly from one another. If we admit, therefore, that the IL must be fit not only for writing, but also for speaking, there is no language in China which could serve our purpose. The written signs of China, too, would be useless because of their great defectiveness.

"But even if the spoken dialect most diffused in China would comply with our formula more than any European language, the words of that dialect would be entirely inappropriate because of their tonal character. Every word is monosyllabic and characterized by a musical tone which is as important for the meaning of the word as its consonants and vowels. If a word that ought to have a high equal tone be pronounced with a low equal tone or with an ascending or descending tone, the sense of the word is thereby changed. This tonality is different in different districts and for others than Chinamen it would create insurmountable difficulties. Such words are, therefore, unfit for the IL. On the other hand, if the words were adopted without their tonality, they would be unrecognizable to the natives and the language would have an immense number of words of the same sound, but of different meaning; it would be full of ambiguities.

"It follows that the IL cannot be Chinese, neither wholly, nor partly."

sen: The best international language is the one which offers the greatest facility to the greatest number of people on earth.

In complying with the principle of internationality only languages of those races come into consideration which have been the bearers of civilization. These languages are highly developed and have many common traits. The idioms of the races who have been backward in civilization for thousands of years are undeveloped and entirely foreign to the other languages. A combination of the two would be a heterogeneous mixture unpalatable like pidgin-English.

The IL must be phonetic. This does not mean that a simple sound may not be represented by a combination of letters, for instance, the sound sh by the letter combination sh; or a composed sound by one letter, for instance, the sound ks by the letter x. Proper phonetics only requires that a letter or letter combination be always pronounced in the same manner and a simple sound always represented by the same sign. The sound f cannot be given once by the sign f, another time by the sign ph. Since the former represents that sound in all languages much oftener than the latter, it follows that every ph of that sound has to be replaced by f. Likewise other letters have to be changed. Thus the letter k has to be substituted for the letter c whenever the latter has the sound k.

The IL must be euphonious. This excludes letters and letter combinations hard to pronounce and necessitates slight modifications of *a posteriori* words. For instance, the most international sound to be attributed to the letter c is that of the combinations ts in wits. Now in some roots c is preceded by s or by x = ks, for example, in the international roots scienc, excit, etc. Phonetically these roots would have to be

pronounced *stsients*, *ekstsit*—this is extremely difficult. The preceding s or x is, therefore, to be omitted, which leaves the roots *cienc*, *ecit*.

Phonetics and euphony thus condition slight changes of *a posteriori* words. But actual mutilations of the latter must not take place as thereby the advantages of the *a posteriori* character of words would be lost entirely. Volapük, for instance, has often mutilated words beyond recognition. No Englishman could recognize his "world speech" in the word "volapük." A similar error is met with in another device mistakenly classed among the *a posteriori* systems. It has deformed, for instance, the international roots cerebral, frontal, manual, etc., into *cerb*, *frunt*, *man*, etc. Such roots must remain intact.

The vocabulary of the AIL will consist, to the greatest possible extent, of international words. But these alone are not sufficient for a complete language. A great many national words will have to be added. In selecting such a word for a certain conception that language is to be preferred which possesses the most adequate word for the conception (*Filologiala Temi*, No. V). For instance, we are seeking a word for the conception: To obtain something as a compensation for labor or as a legitimate commercial profit. Only the English language possesses an adequate word for that conception, namely, "to earn" (l. c., pp. 77, 83, No. 4). The French word, *gagner*, and the German word, *verdienen*, are inadequate. Many other examples can be cited (l. c.). As a rule, a language richer than another in general or in the case under consideration will possess the more adequate words so that the first one is to be preferred as a source for national words needed in the AIL.

We have thus determined logically the

root words of the AIL. They will consist of international roots, *i. e.*, those common to the principal living languages, and of national roots taken from languages dead or living which are richer than others in general or in the case under consideration.

Grammar.

The root words alone are not sufficient, but derivatives from them are also needed. The discussion of the latter has to be preceded by an exposition of the grammar. For the sake of facility the elementary grammar, the accidente, must be of utmost simplicity, reduced to a minimum, to a single short rule if possible. There cannot be any simpler rule than the following one: The main parts of speech are recognizable by characteristic affixes (affixes because the root of a word must always remain intact). This rule alone reveals the grammatical rôle of every word in a sentence and this is all that is needed to understand any given text as far as grammar is concerned. The normal order of the parts of a sentence is: 1, subject with its attributes; 2, predicate with its attributes; 3, object with its attributes. A sentence deviating from that order becomes clear by making the object recognizable thru a characteristic affix.

Only suffixes can be attached conveniently to all kinds of roots. It follows that our affixes must be suffixes or endings. Fourteen such endings are needed for characterizing the main parts of speech, including all the forms of the verb which require special characterization. These endings, which may be called grammatical endings, must begin with a vowel so that they can be added to any root and must be monosyllabic in order not to create too long words. The exact form of these endings can be deduced philologically and thru the princi-

ple of internationality. In this way the following 14 endings are obtained.

Every word of two or more syllables ending in:

1. -o is a noun;
2. -a is an adjective;
3. -e is an adverb;
4. -u is a pronoun denoting a person;
5. -i is a plural;
6. -n is an accusative;
7. -ar is an infinitive of the present;
8. -ir is an infinitive of the past;
9. -or is an infinitive of the future;
10. -as is an indicative of the present;
11. -is is an indicative of the past;
12. -os is an indicative of the future;
13. -us is a conditional;
14. -ez is an optative.

Everything beyond that minimum of grammar is an unnecessary complication. Declension of the noun, or the cases, can be indicated by prepositions as in most of the modern languages. The accusative case is superfluous except in very rare instances, so is the variation of the adjective as proved by the example of the English language.

The syntactical rules of grammar should

Some essayists object even to the above minimum of grammar in the AIL. They would want it to consist only of words never inflected. And, indeed, there are natural examples of individuals making themselves well understood by languages of that character. The very young child does not use inflections in his talk, nor even prepositions. When he says: Sister come tomorrow Boston, he has constructed quite a clear sentence = my sister will come from Boston tomorrow. Even his "daddy bring Monday candy" cannot be mistaken; before Monday the sentence means: Father will bring candy on Monday; and after Monday it means: Father brought candy on Monday. The inflection of "bring" to "brought" appears, therefore, superfluous. Similar languages are the dialects that have developed spontaneously among people devoid of any education in regions where many idioms are often heard. Such jargons are the Lingua Franca used on the Mediterranean coast, Chinook in the region of the Columbia River, and pidgin-English on the Chinese coast. Such jargons do not represent progress, but regression to barbarity. Their ways are not adapted for the IL which is chiefly intended for the expression of the highest thoughts of the best intellects. To convince themselves of this those essayists should construct a language patterned after those jargons and use it practically for translating works of Homer, Aristotle, Shakespeare, Newton, Darwin, Goethe, Spinoza, Einstein. They would then see that they would not get very far with their device.

be only those required by general logic and common to all well-developed languages. Those rules are needed for the intelligent expression of complicated thoughts and indispensable for the communications of ingenious minds.

Derivation.

The words of the AIL, as we have seen, consist of roots and grammatical endings. The latter enhance the facility of the language by revealing at the first glance the grammatical rôle of the words. But the endings are not needed for determining the senses of the words except in the case of the modes and tenses of the verb. The senses of the words are contained in the roots alone. Every root has some sense (primary sense, species, class, grammatical sense), inasmuch as it is either substantival, adjectival, verbal, or adverbial. The other parts of speech being merely particles need not be considered.

1. The roots blam, send, vacil, are verbal; branch, garden, tabl are substantival; bon, grand, red are adjectival; oft, bald, sempr are adverbial. With some roots—their number is comparatively small—the sense may be adjectival as well as substantival. 2. The roots Angl, Franc, invalid, katolik, etc., may be primarily substantival or primarily adjectival. Because of the character of these roots the unexcelled exponent of logical derivation, Dr. L. Couturat, holds to the view that a root has no grammatical sense (species) (*Etude sur la Derivation*, pp. 7, 20, 21; *Progr.*, 487). The roots of No. 1 disprove that view; in the natural languages, which have no grammatical endings, they are used even as complete words. Moreover, the roots of No. 2 are certainly not verbal or adverbial, but only substantival or adjectival so that even here the sense is circumscribed a good deal. The species of roots is of

great importance in derivation, especially from composed roots (*Progr.* 7, 488; *Temi*, pp. 12, 49, 53). The roots do not need to be classified, their species being given by their very nature. The species of the roots of No. 2 has to be fixed as adjectival for reasons of expediency pointed out elsewhere (l. c.).

In deriving a word from another one the root must remain unchanged for the sake of facility; derivation is to be accomplished by affixes, prefixes or suffixes, leaving the root intact.

A word may be transformed into another one with no other change but that of grammatical rôle, for instance, a verb may be converted into a substantive. This derivation is evidently accomplished by changing the grammatical ending of a word. Given a verb we obtain from it a substantive by replacing the ending -ar with the ending -o. The exact meaning of that substantive, which is the important factor in the whole proceeding, will be deduced later. The grammatical endings have no meanings by themselves, but merely serve to indicate a grammatical rôle; they are, therefore, affixes adequate for producing derivatives differing from their originals thru grammatical rôle only. This derivation is called immediate derivation because the derivative does not contain an idea not contained in the original. The same idea, that of the root, is expressed under a different grammatical rôle.

In a second mode of derivation the change of grammatical rôle is irrelevant. What is essential is that an additional idea, an idea not contained in the original, is expressed by the derivative, the grammatical rôle remaining the same or becoming a different one. This derivation is called mediate derivation because a word is obtained from another one by the medium of an additional

idea. Evidently this derivation can only be accomplished by affixes which have meanings by themselves.

The exact meanings of derivatives depend upon several principles. The fundamental principle for a logical language is the principle of unambiguity propounded by Wilhelm Ostwald: Every element of a word, as root and affix, must have but one invariable sense which it must retain in all combinations it may enter into—one sign . . . one invariable sense (*Ido*, note 12, p. 96). As Couturat has shown, this principle includes the postulate that every element of idea in the meaning of a word must be represented by an element of form (I, 390). The inverse of that postulate is also true as the writer has pointed out (*Fil. Tem.*, p. 14): Every formal element of a word must be represented by an element of idea in the meaning of the word. This is identical with the following amplification of the main principle: No element of a word consisting of several elements may lose its meaning. We obtain, therefore, the following principle: The meaning of a word consisting of several elements must contain the meanings of all of them, but no other idea. An additional formal element is needed for deriving a word containing an additional idea.

Mediate Derivation.—We can now determine easily the meaning of a word derived mediately: It is composite, it contains the sense of the root of the original and the meaning of the affix.

Examples:

1. Tabl-o = table; suppose suffix -et = little, then tablet-o = little table.
2. Aqu-o = water; suppose suffix -oz = containing, then aquoz-a = containing water.
3. Instrukt-ar = to instruct; suppose suffix -iv = able to, then instruktiv-a = able to instruct.

4. Koloro = color; suppose suffix -iz = to provide with, then kolorizar = to provide with color, to color.

In the first example a substantive has been derived from a substantive with the additional idea, "little"; in the second an adjective from a substantive with the additional idea, "containing"; in the third an adjective from a verb with the additional idea, "able to"; and in the fourth a verb from a substantive with the additional idea, "to provide with."

Immediate Derivation.—A root is made into a word by adding a grammatical ending. It is logical that the primary word should correspond to the sense of the root. A verbal root, therefore, furnishes primarily a verb, a substantival root primarily a substantive, etc. The primary word of the root am is the verb am-ar = to love; of the root libr the substantive libr-o = book; of the root rapid the adjective rapid-a = rapid; and of the root hier the adverb hier-e = yesterday.

The grammatical endings of primary words may be changed into other endings whereby secondary words are obtained. The exact meanings of these depend upon the relation between the various parts of speech.

A. Substantival Roots. The primary word of a substantival root is a substantive: lign-o = wood; hom-o = man; ston-o = stone.

1. The relation between the substantive and the adjective derived from it immediately is that the latter signifies: Being that substantive, which is that substantive, for instance, lign-a = being wood, which is wood, wooden. When the adjective is to include an idea not contained in the root, an additional formal element is needed and the derivation is a mediate one, for instance: Suppose suffix -al = relating to, then homal-a = relating to man, human; suffix -oz = containing, full of; stonoz-a =

containing stone, full of stone, stony.

2. The relation between the substantive and the immediate adverb can be defined indirectly by the intermedium of the secondary adjective: The adverb signifies, "in the manner of the quality expressed by that adjective": Okazion-o = occasion; okazion-a = being an occasion; okazion-e = in the manner of "being an occasion," occasionally; or the adverb may be defined directly: It signifies, "in the manner of the substantive," for instance, seman-o = a week; seman-e = in the manner of, "a week," weekly.

3. A verb cannot be formed immediately from a substantival root. There is no rational relation between an intrinsic substantive (substantive the root of which is substantival) and a verb derived immediately. Any relation that may be constructed between the two includes an additional idea not contained in the root. An additional formal element is therefore needed. A verb can be formed from a substantival root only meditately, for instance: Sal-o = salt; suffix -iz = to provide with; saliz-ar = to provide with salt, to salt.

B. Adjectival Roots. The primary word of an adjectival root is an adjective: Grand-a = great, perfekt-a = perfect, red-a = red.

1. The relation between the adjective and the immediate substantive is that the latter signifies: Anything whatsoever possessing the quality expressed by the adjective: Grand-o = anything great = Gr., τὸ μέγαν = Germ., das Grosse; perfekt-o = anything perfect = Gr., τὸ τέλειον = Germ., das Vollkommen; red-o = anything red = Gr., τὸ ἐρυθρόν = Germ., das Rote. We call such substantives Aristotelian substantives.

The possessor cannot be anything special (*Temi*, p. 48), for instance, a person or a special thing mentioned before or to be mentioned afterwards. For thereby the derivative would contain an idea not contained in the root; the idea "person" is not contained in the roots grand, perfekt, red (1 c., p. 47). For converting an adjective into a substantive denoting a person or a special thing additional formal elements are needed (1. c., pp. 51-53).

Roots which may be both adjectival and

substantival are to be fixed as adjectival so that the primary words are adjectives. Their immediate substantives can then have the Aristotelian sense.

2. The relation between the adjective and the immediate adverb is that the latter signifies: In the manner of the quality expressed by the adjective, stult-a = foolish; stult-e = in a foolish manner, foolishly.

3. A verb cannot be derived immediately from an adjectival root. There is no rational relation between the primary adjective and the immediate verb. Any relation that may be constructed between the two contains an additional idea for which an additional formal element is necessary: Pur-a = pure, clean; suppose suffix -ig = to render; then purig-ar = to render clean, to clean.

C. Verbal Roots. A verbal root furnishes primarily a verb: Am-ar = to love; parol-ar = to speak; protekt-ar = to protect.

1. The relation between the verb and the immediate substantive is that the latter signifies the action or state implied by the former: Am-o = act of loving, love; parol-o = act of speaking; protekt-o = act of protecting, protection.

In many cases the substantive may denote the result of an action besides the latter because the two are often inseparable (*Etude sur la Dériv.*, p. 9; *Ido*, note 13, p. 96): Parol-o = result of speaking, word; respond-ar = to answer; respond-o = act of answering or its result, answer, the words used as an answer (*Ido*, note 22, p. 99).

Ordinarily, however, the result of an action implies an additional idea requiring an additional formal element. Suppose the idea "result of" is indicated by the suffix -ur, then we have: Konstrukt-ar = to construct; konstrukt-o = construction, act of constructing; konstruktur-o = result of constructing, structure.

2. The immediate adjective is obtained by the intermedium of the secondary substantive and the relation between the two is the same as in A, 1: Parol-o = word; parol-a = being a word, verbal; skrib-ar = to write; skrib-o = act of writing, writing; skrib-a = being writing, in writing.

If the adjective is to contain an additional idea, the derivation must be mediate and is

accomplished, as in the preceding case, also by the intermedium of the substantive: Pek-ar = to sin; pek-o = act or result of sinning, sin; pekoza = containing sin, full of sin, sinful.

3. The immediate adverb is obtained from the secondary adjective and the relation between the two is the same as in B, 2: Parol-e = in the manner of being a word, verbally.

D. There are only very few adverbial roots or primary adverbs: Hier-e = yesterday; morg-e = tomorrow; oft-e = often.

A rational relation exists only between the adverb and the immediate adjective: Hier-a = of yesterday; oft-a = happening often, frequent. An immediate substantive, "hier-o," or verb, "hier-ar" would have no sense. Sometimes a verb may be obtained meditately from the secondary adjective: Oft-a = frequent; oftig-ar = to render frequent.

One important consequence to be drawn from the preceding considerations is that a verb can be derived immediately only from a verbal root.

The exact meanings of all kinds of derivatives has thus been deduced from the principle of unambiguity and the inherent relations between the various parts of speech. The results arrived at are precisely the same as those obtained by Dr. Couturat. But our reasoning differs radically from his in one important point: He emphatically rejects attributing a grammatical sense (species) to roots (*Etude sur la Dér.*, pp. 7, 20, 21; *Progr. VII*, pp. 488, 497; *Temi*, p. 12); we expressly maintain that such a sense is inherent in most of the roots and postulate the adjectival sense for a small number of roots in which the sense varies between being adjectival and being substantival. In the system which divests the roots of a primary sense a substantive derived immediately from an adjectival-substantival root denotes now anything whatsoever possessing the

quality implied by the root, now a person, now a special thing. This is inadmissible in a logical language. Here every simple (not composed) word must have a meaning fully circumscribed even without the context. This is the case in the system which insists upon a primary sense for every root. Here that substantive has the Aristotelian sense, while substantives denoting a person and a special thing are formed by special affixes.

The correctness of a derivation can be tested, according to Couturat, by his principle of reversibility (*Et. s. l. Dér.*, p. 7): "If one passes from one word to another one of the same family by virtue of a certain rule, he must be able to pass back from the second word to the first one by virtue of a rule which is exactly the reverse of the preceding one." The wording of this test is not very clear. Indeed, the adherents of systems with illogical derivation assert that their derivatives are reversible and therefore satisfy Couturat's principle. Moreover, the latter is rather complicated. One must resort to a certain rule and form its inverse. A much simpler test which excludes any illogical derivation is obtained thru the following proposition which may be called "principle of the additional idea": Every additional idea (idea not contained in the original) in the meaning of a derived word requires an additional formal element in the word. One need not know any further rule and its inverse to see that a derivative contains an idea not contained in the root. Suppose from the substantive *nest-o* = the nest, were formed a verb *nest-ar* with the meaning, "to reside in a nest." One sees at once that this derivation is wrong. The idea "to reside in" is not contained in the root "nest" and there is no formal element in the derivative "nest-ar" to indicate that idea.

Another adequate test for the correctness of a derivation is the following principle: Logical derivation requires that a word of the original meaning be obtained in passing back from the derived form to the original one. This follows from the principle of unambiguity, for a derived word is obtained from another one by changing the form of the latter; when the original form is restored, the original sense must be restored, too, since the same form must always have the same sense. If the original meaning is not obtained in going back from the derived form to the original one, the derivation is wrong. The following example will elucidate this. It is not right to derive the verb *kron-ar* = to crown, from the substantive *kron-o* = the crown. For going back by changing the ending -ar into -o we obtain the noun *kron-o* which now must signify "the act of crowning" (see C, 1). The same word *kron-o* would thus signify once "the crown," another time, "the act of crowning," which conflicts with the principle of unambiguity. The derivation is wrong because the original sense is not restored in restoring the original form.

Derivation by Composition.—The determination of the meanings of composed words offers many points of great philologic interest. They have been treated by the writer in a special essay where the meanings of all kinds of compositions have been deduced logically. Only one principle may be repeated here and illustrated by an example: The meaning of a composed word must not contain an element of idea not contained in the components (*Temi*, pp. 13, 14). Suppose the word "interakt-o" were formed from the preposition *inter* = between, and the noun *akt-o* = act, then the composition can signify only "act between . . ." (between any two events determined by the context). It is wrong to attribute to "interakt-o" the

meaning "intermission," "pause"; for this idea is not contained in the components "inter" and "akt-o."

Recapitulation.

The AIL is independent of the arbitrary decision of authors, its shape being completely determined by logical deductions. The root words, original words, are given thru the principle of maximum of internationality and the *a posteriori* principle. The postulate that the various parts of speech must be recognizable by characteristic endings determines the whole elementary grammar. The syntactical rules are only those of general logic. The meanings of the immediate derivatives depend upon the principle of unambiguity and upon the relations between the various parts of speech. These relations are not subject to arbitrary definition, but are inherent in the parts of speech. The rules of immediate derivation are, therefore, not free, but predetermined.

The meaning of a mediate derivative includes the meanings of the root and of the affix. The majority of the affixes are determined by the principle of internationality. Thus the suffix -iz = to provide with, -oz = containing, etc., are international. But a good many other affixes are needed. They may be more or less arbitrary. In this respect the AIL is capable of further development and may be enriched by the ingenuity of authors. By inventing new appropriate affixes they may enhance the expressiveness of the language. Its shape, however, would not be perceptibly modified thru this.

The meanings of composed words follow from logical deductions.

Name of the AIL.—The AIL needs a name. Several requirements are to be fulfilled in selecting it. To favor one author by using his real or assumed name for the

purpose would be unjust. The idea to create the AIL belongs to a great many thinkers, and the logical principles for it have not been evolved by one philosopher or linguist either. The fundamental principle of unambiguity, for instance, ascribed to Wilhelm Ostwald has already been enunciated in a different way by Jacob v. Grimm and probably by others besides him. Allusions to utopias, such as human love, peace, hope, etc., attract fanatics and repel sober-minded people, doing thereby more harm than good to the cause, and obscure the real purpose of the AIL which is nothing but utilitarian. The name sought should have a proper meaning in the language itself, directly or indirectly. A mere suffix, for instance, that is used in the language has no sense.

There is an expression which fulfils the preceding three requirements and this is Internacion-a Lingü-o = International Language. But it is incompatible with a fourth important requirement. Derivatives from the name of the language will be very frequent. They could not be formed from that expression because it consists of two words. The name should be short, one word of a monosyllabic root so that derivatives would not produce too long words. There is only one way to comply with the four requirements and this is to use only the initials of the two words of our expression in constructing a root for the name of the language. In this way we obtain the word Il-o which constitutes the rational name of the AIL.

Comparison Between Il-o and Other Systems.

—The point of view of the adherents of any special system has not entered into the treatment of the subject-matter of this essay, *i. e.*, the derivation of the logical shape of the AIL, the latter having been deduced from purely logical reasonings, from "re-

quirements and principles that every rational person must acknowledge" (see above). This will be conceded by any attentive reader not blinded by unreasonable or sentimental partiality towards some system which disagrees with our results. The following few pages have no bearing upon our theme (logical shape of the AIL) and might entirely be dispensed with as far as the latter is concerned. They are, however, of considerable practical importance inasmuch as they inform the reader about the present situation of the international language question in which the public is now taking great interest.

The principles which must form the basis of a logical international language are far from being realized in any one of the numerous artificial systems devised since the time of Leibnitz until the beginning of this century. Those principles have been clearly formulated for the first time by Dr. L. Couturat between 1903-1908 and previous language inventors knew nothing or little about them. Their systems, therefore, differ vastly from Ilo as may be seen by an exposition of the most important deviations met with in one of those systems, Esperanto.

1. Of the 2,629 root words which constitute the whole vocabulary of Esperanto, 1,055 violate more or less the principle of internationality (*Bulletin Français-Ido*, p. 152). Some international roots are greatly mutilated, for instance, the roots cerebral, frontal, etc., are deformed into cerb, frunt, etc. The most frequently occurring words are not *a posteriori*, but entirely arbitrary. The writer, therefore, cannot agree with Dr. Couturat who ranges Esperanto among the *a posteriori* systems, but consider it as a mixed system. Owing to the extensive disregard of the *a posteriori* principle, Esperanto texts are unintelligible without a dictionary even to expert linguists who understand real *a posteriori* systems almost at the first glance after having devoted but a few minutes' time to the elementary grammar comparatively simple in all those systems.

2. The Esperanto grammar is greatly

complicated thru the obligatory accusative, the use of which has been made even more frequent than in the ancient languages. Another great difficulty is the inflection of the adjective according to case and number. The consequence of these complications and others is that even people of good education are unable to write Esperanto correctly after having studied it for a long time.

3. There is no regular system of derivation in Esperanto. Absurd derivatives, therefore, abound in the language. Numerous examples to that effect are given in Couturat's excellent monograph, *Etude sur la Dérivation en Esperanto* and in de Beaufront's *Bulletin Français-Ido*.

4. Some composed words are preposterous. Thus the words "ox" and "stallion" are rendered by the composition, *bovorviro* and *chevalviro*, which logically can mean only "beef man," "horse man" = a man who is a beef, a horse; *bovo* = beef, *chevalo* = horse, *viro* = man.

5. Another important defect of Esperanto is the introduction of five peculiar letters, rendering the printing of Esperanto works difficult and expensive.

6. Esperanto has a very disagreeable sound owing to the extreme frequency of the sibilants and to the constant repetition of certain syllables. The sounds cha, che, chi, cho, chu recur incessantly and the syllables aj, ej, oj, uj, ajn, ojn, ujn are met with in 30-40% of the words in the best Esperanto works.

From the preceding short outline of the principal defects of Esperanto it is evident that it differs radically from Ilo.

International Language of the Delegation.

—These defects are eliminated in the system now known under the name Ido. It appeared in the fall of 1907 about half a year after the publication of Couturat's

Simplicity and ease of learning are excluded thru the grammatical complications mentioned in No. 2 and still more thru the lack of a regular system of derivation. For true facility can obtain only in a system employing exactness of thought analysis in word building. A system devoid of this inestimable feature has to pack too much into the word itself. For it has to leave much to the context and the latter is often unreliable. A striking example is the Esperanto word, *vagon-ar-kontrau-sku-eg-risorto*, one word into which six conceptions are crowded and which signifies in English, buffer = Ilo, bufro (*Bull. Français-Ido*, p. 150).

Etude sur la Dérivation. The author of the new system, Marquis L. de Beaufront, had been the foremost Esperantist and, therefore, his project contained originally a good many of the imperfections of Esperanto. They were all eliminated later and the whole system was greatly improved upon and amplified by the Permanent Commission of the International Delegation for the Adoption of an Auxiliary International Language, under the leadership of Dr. L. Couturat and the able linguist Paul de Janko, and with the collaboration of other serious students of the international language problem.

The notion that Ido is simplified Esperanto is a great error. One might more justly call Ido simplified Idiom Neutral, Nov-Latin, etc. All *a posteriori* system resemble each other a great deal in the vocabulary which is the chief part of any system. Ido in this respect is much nearer to the devices just mentioned than to Esperanto, which violates the *a posteriori* principle extensively. Grammatically Ido has in common with Esperanto only seven grammatical endings and some other affixes. The idea of deriving words by affixes is not original with Esperanto, but already

A few sentences likely to occur often in everyday life will best illustrate the repugnant sound of Esperanto. 1. *Chu shi sciighis chion?* = Did she learn everything? 2. *Chu shia vocho plachas al vi?* = Does her voice please you? 3. *Char shi charmas chiujn per sia ghentileco.* = For she charms all with her gentleness.

The following sentences from the writings of Dr. Zamenhof himself are characteristic of the tedious monotony of Esperanto. 4. *Shi havis la plej gracajn malgrandajn blankajn piedetojn, kiujn bela knabino nur povas havi.* = She had the most graceful little white feet which a beautiful girl can ever have. 5. *Shi envolvis sin en siajn densajn longajn harojn.* = She wrapped herself up in her thick long hair. 6. *Shi mal-rapidigis siajn pashojn; sur shiaj flavighintaj, velkintaj, kavighintaj vangoj aperas rughaj makuloj.* = She slackened her steps; on her cheeks, turned yellow, withered, hollowed, appear red spots (*Bul. F.-I.*, p. 144).

contained in earlier systems (*Communicationssprache*, Schipfer, 1839; *Universalsprache*, Pirro, 1868, etc.). The use of grammatical endings for characterizing the parts of speech, Esperanto's best feature, is not peculiar to Esperanto, but already met with in much older devices (*Langue nouvelle*, Faguet, 1765; *Pantos-dimou-glossa*, Rudelle, 1858; *Weltsprache*, Eichhorn, 1887). Even the same grammatical endings as those of Esperanto are partly used in these devices.

The International Language of the Delegation conforms with our Ilo. It was also called by this appropriate name during the first two years following the adoption of Ido by the Delegation.

In several publications (*Filologiala Temi*; *Raporti al Idoakademio*, etc.) the writer has indicated the lines along which Ido can be further improved. Its present constitution would not be perceptibly changed by these improvements. The most important point for a modification is the meaning of the substantive derived immediately from an adjective. This substantive must receive the Aristotelian sense.

Extent of the Vocabulary of the AIL.—The vocabulary of Ilo can and should be made so large that the language should have a one word expression for every conception that can be expressed with one word in any principal language. This is the writer's

The above sentences of Esperanto rendered into Ido will show the vast difference between the two and at the same time the pleasing aspect and sound of the latter. 1. *Kad el saveskis omno?* 2. *Kad elua voco plezas a vu?* 3. *Nam el charmas omni per sua jentileso.* 4. *El havis la maxim gracioza mikra blanka pedi quin bela puerino ultempe povas havar.* 5. *El envelopis su en sua densa longa hari.* 6. *El plulentigis sua pazi; sur elua vangi, flaveskinta, velkinta, kavigita, aparas reda makuli.*

The name Ilo was subsequently replaced by the word Ido, the pseudonym under which de Beaufront had presented his project to the Delegation. The reasonableness of that change of name is questionable.

answer to the question: "How many words are needed?" (*Progr. IV*, 139). Only such a vocabulary would impart true facility to Ilo. The objection that the student would have to burden his memory too much is not valid. No English student needs to remember all the words contained in the Standard Dictionary. It is a great fallacy—fostered by the Esperantists—that a language is so much easier, the less root words it possesses. Just the opposite is true. When the international language does not possess a word for a conception that can be expressed with one word in a natural language, a writer belonging to the latter has to apply the means of derivation, composition, or periphrasis, a task that is often very difficult and can be accomplished only by a competent linguist. Even he may sometimes be helpless as shown by the preposterous Esperanto word, *bovoviro* = beef man, a man who is a beef, for the English word "ox," for which Esperanto's poor vocabulary has no translation and for which no adequate expression can be constructed in Esperanto thru derivation, composition,

or periphrasis. The average student needs to know only the small number of words which occur in everyday life. But a rich treasure of ready words laid down in dictionaries should be at the disposal of the promulgators of rich thoughts. Their task would then be much easier than when they have to forge their words. Unlimited richness of the vocabulary is one of Grimm's excellent postulates for the AIL.

Conclusion.

The need of an auxiliary international language has not been lessened, but rather enhanced by the world conditions brought about thru the recent great struggle of the nations. For hatred and jealousy between them have been intensified to an extent unprecedented in the history of mankind. All the more they need a neutral language for their unavoidable intercourse. When true general peace will again prevail in the world, the same language which has served the enemies in their necessary transactions will enable the friends to understand each other properly in all affairs of mutual interest.

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THE BLESSING OF HEALTH IN OLD AGE.

"Now if we can just discover a remedy for hardening arteries and enlarged hearts, and for Bright's disease, says H. W. Wiley in an exceedingly interesting Commencement address, which appears in the *Hahnemannian Monthly* (August, 1922), nearly all the diseases of old age will be conquered, and all infectious diseases will be brought under control. Then we will have healthy men and women, old men and women, men like Charles William Eliot, the Emeritus President of Harvard University, ninety years of age, full of physical and mental vigor, walks like a boy, a man who all his life has been a blessing to humanity. Since his voluntary retirement from the presidency he has been just as much a blessing to humanity as he was before. Isn't that a typical man on which to model? Let us be like Holmes' 'One Horse Shay'—to live a hundred years with all our organs equally vital and equally functioning and then all these parts at once. That is my idea of human destiny in this world."

A BRIEF DESCRIPTION OF THE INDIAN MEDICAL SERVICE.

BY

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Udayagiri, Nellore District, India.

The title, Indian Medical Service, gives the letters I. M. S. which are affixed to the names of that noble army of British doctors, who in the past have done signal service for the millions of India. They are government officials and carry on two departments of medical work, namely, Military and Civil. Of late there has been a strong agitation to Indianize all departments of government service. A beginning has been made in the military branch of the service and that means that the British doctors will not be recruited from England in the future. The question is, can we expect that those highly qualified men of Britain will consent to come to India and serve under Indians who are opposed to Western methods of medical science? Regarding the Civil Medical Department, the advent of the Montagu-Chelmsford political reforms meant continual harassment from legislative councils which were openly committed to a reversion to prehistoric systems of medicine.

In another article I will have something to say regarding those prehistoric systems which are known as the Ayurvedic and Unani.

Then we have Medical Missions in all parts of India. The missionary doctor began work in Travancore, South India. Dr. Archibald Ramsay labored in Nagercoil from 1838-1842. Volumes could be written of what has been accomplished by the Indian Medical Service and Medical Missions.

About three years ago I had the pleasure of traveling with an I. M. S. officer on a Bibby liner to England. We had known

each other for several years and I had visited his Royapuram Medical School and Hospital where he has done a great work. It may be of interest to your readers to know the extent of the work which he had to undertake in Madras during the great war when the medical services of this presidency were beset with difficulties which are quite unparalleled. The services had been drained dry to supply the needs of the armies in the field. In 1919 he held the following positions:

I. Presidency Surgeon, First District, Madras. II. Principal Royapuram Medical School (500 students). III. Senior Medical Officer and Surgeon Royapuram Hospital (200 beds). IV. Superintendent Ramaswamy Maternity (550 beds; 1,400 babies per annum). V. Superintendent Leper Asylum (550 beds). VI. Fellow Member of Senate, Examiner in Surgery, Madras University. VII. Commissioner, Madras Corporation. VIII. Official Member, Madras Medical Council. IX. Member of Committee, Pasteur Institute. X. Official Member, Government Welfare Scheme. XI. Member Committee Tuberculosis Institute. XII. President of Weekly Medical Board. XIII. Medical Inspector of Emigrants. Director Y. M. C. A. and Member Christian College Council.

To add to his difficulties he was requested to present annual reports for four of these important positions, namely: I. Presidency Surgeon, First District Madras. II. Principal Royapuram Medical School. VI. Fellow, Member of Senate, Examiner in Surgery, Madras University. XIII. Medical Inspector of Emigrants. The work was no sinecure. Each department felt the guiding power of his hand.

During our journey to England he furnished me with the following facts from

what he had met with during his medical service in India.

Faced with the colossal magnitude of medical needs in India, imagination fails and figures convey but the fringe of actuality. Attempts made up-to-date might well be compared with the effort of a snail to move a pyramid.

Two bodies of workers stand out by themselves as the only organized attempt to tackle an immense problem. These are the Indian Medical Service and the Medical Missionary. The work done by the former is known to the world. It is a service whose history is contemporary with that of the British in India. It has organized medical schools whose professional standard is little short of the best in the West and proof of this may be found in the fact that the courses and curricula are recognized by examining bodies in Great Britain as fitting the student for immediate examination without further study, in many cases. It has built hospitals which compare favorably with the most up-to-date in Europe. In original research the I. M. S. has outstripped Western contemporaries for the simple reason that the field is incomparably greater in the East. Malaria, dysentery, plague, kala-azar, leprosy and cholera are examples of scourges which have been robbed of their fatal characteristics by the patient labor of members of the service who are still in the full possession of their faculties and alive today. The marvelous results achieved by a minute body never more than 700 or 800 strong in a continent teeming with millions of human beings, can only be explained by the fact that it is a picked body of carefully selected men. Primarily a military service, a certain number are always at the disposal of the government to supply the needs of the troops, and in doing so the area covered by their work extends to

Africa, Mesopotamia, Egypt and France. These officers by reason of frequent transfers and the nature of their duties have not perhaps the same scope for original effort as those who constitute the civil side, a proportion of the original number who are "seconded" and constitute the body of civil surgeons, professors of colleges, heads of hospitals and the eminently successful Jail Department. A glance at the military honors conferred on them is proof of the high esteem they are held in by their combatant brothers and need no comment.

Ask any senior I. M. S. officer about his service, and the work done and to be done and the prevailing note in his reply will be one of despair. The "accomplished" is a drop in the ocean of the "possible." A parsimony and stinginess which appears to characterize the attitude of the government is only equalled by the lack of appreciation and want of practical sympathy on the part of the people. What benefit to the thousands who perish with the utmost regularity annually from cholera, to have a method of treatment worked out which reduces the mortality from 80% of deaths to over 80% of recoveries, if the means for skilled carrying out the remedy are lacking. Where thousands of skilled workers are necessary, the number available can be counted by the dozen and begrudged at that.

One solace for the despairing is the magnificent work of the medical missionary. To many a case beyond the limits of the I. M. S. man his missionary brother comes to the rescue. Large tracts of land inhabited by hordes of human beings are cared for by him, to the intense relief of the government and the government official. Speak to him about his work and you will find that if the I. M. S. man is plumbing the depths of despair, the medical missionary is even a worse case. Both suffer from

the trials of a foreign climate, from lack of rest and change, from excess of responsibility and physical toil. To both are denied the tools to carry on their work and if money is a difficulty with the government official, it is a thousand times more so in the case of the missionary.

And what about the future? In the past the I. M. S., as has been shown, has attracted the cream of the profession—none other could have achieved such results. The medical missionary has included men like the brothers Neve of Kishmir, Wanless of Miraj, Lancaster of the Northwest Provinces, Campbell and Thompson of Jammalamadugu, the Scudders of Vellore and a host of other men of the front rank—none other can face the task. Men of the highest qualifications, of robust physique and, above all, men and women who could originate and organize on a grand scale. Sanitation, infant and maternity welfare, and a thousand other elementary matters of fundamental importance remain in this twentieth century in the greater part of the land of India, an absolutely unknown quantity.

Political power appears to be passing rapidly into the hands of a small clique of semi-educated lawyers who have never shown the slightest desire, or made the smallest attempt to alleviate the sufferings of their poorer brethren. Place seekers, lacking the most elementary ideas of honesty and sincerity, who do not hesitate to vilify the European and preach sedition openly. The work grows and the need for men of sterling ability, with big minds and large hearts, grows darker even hourly. Official and non-official are unanimous on one point: India is in a bad way. What about it? Let us deal with facts. There is no help for a man in this world or any other but just the truth.

If India was in a bad way in 1920, what about it in 1923? Here are some facts that have come under my own observation.

As soon as the political reforms came into operation the citizens of the Municipality or Union of Udayagiri, where I reside, refused to continue to pay taxes—the result being that all efforts of sanitation and the cleaning up of the town were stopped. Scavengers were dismissed, street lights removed. Chairman and secretary and members of council ceased all work. Something like six thousand people have happily returned to the place where the British Government found them over a century ago, namely, dung hills. Remember that half of the population are Mohammedans with their strict gosha system, and picture to yourself the meaning of that from a sanitary standpoint when no effort is taken for the removal of night soil and filth. Mark you, a Brahman president of the Nellore District Board was responsible for abolishing the municipality of Udayagiri. He is also a prominent member of the Madras Legislative Council.

It is reported that the same Brahman lawyer, leader of the local self-government, requested the government to close up six of the hospitals and dispensaries of the Nellore District and convert them into Ayurvedic and Unani systems. The government refused his request; but it will show you the mind of the so-called leaders of India as to where the self-government will ultimately lead.

I have heard on good authority that since the advent of the reforms, 2,700 British officials have taken advantage of their proportionate pensions and have left India. Many of those officials were of the Indian Medical Service. It is expected that next year a large number will leave India on the same ground. I have asked quite a number

of government British officials why they are taking advantage of the proportionate pensions and invariably the reply is, "We can do no good in the country while hindered by the restrictions and rules promulgated by the reforms."

Our Nellore District with an area of 8,000 miles and a population of 1,328,000, has not had a British medical officer for about ten years and there is absolutely no hope of ever seeing another in charge.

My I. M. S. friend was eight years without ever seeing his own children in England. When we traveled together he had only secured six months' furlough. Two months were consumed on the journey to England and back. Will he and others like him return? They know "India is in a bad way. What about it? Let us deal with facts! There is no help for a man in this world or any other but just the truth."

Not Enough Country Doctors.—Medical authorities seem to be agreed, says the editor of *Practical Medicine and Surgery* (July, 1922) that while the present system of medical education increases efficiency, it is not most conducive to the interests of the whole country for the reason that graduates in medicine are not going into the country, but are congesting in the towns and cities. Hundreds of country communities in every state are without physicians and the opinion prevails that the number will increase rapidly until there will soon be no more country doctors. One effect of this will be that people will be more and more tempted to leave remote rural districts, for no one likes to live beyond the easy reach of medical attention and hospital facilities. In proportion as doctors leave the country, in the same proportion will country residence become less desirable. Any system of education that does not distribute its products where they are needed, but that tends to overcrowding in some places at the expense of other sections, needs revision.

THE SURGEON AND THE CRIMINAL.

BY

EDWIN F. BOWERS, M. D.,

New York City.

A blow upon the head, depressing the tables of the skull, may convert a saint into a devil. A jaundiced liver may transform an optimistic Micawber into a homicidal Bill Sykes. A starved organism may develop moral leprosy. Physical defects, readily curable by slight surgical operations or depleting treatment, may result in depravity.

Increase in the oxygen-carrying power of the blood may produce in the backward, stupid-appearing, institution child a wonderfully enhanced ability to absorb knowledge. Free bread and soup, supplied to prospective criminals among our public school children, may thus prove even more indispensable than free books and tuition. Moral colic may be as readily cured as physical colic, if only we knew its causes. Abnormal conditions produce moral irresponsibility.

There is confined in an Eastern penitentiary a man (he is a gentleman by birth, breeding, and education, kindly, lovable, and with high ideals), who is serving a ten-year sentence for stealing a few old neckties, a poker, and some junk in the shape of jewelry. When a student in a German university, this man received a tremendous blow over the head, during one of those foolish saber contests, which resulted in a deep depression in the skull. After some years, the unfortunate fellow, who was a musician and an artist, felt irresistibly impelled to commit burglary.

He exhibited such blundering judgment, from the viewpoint of a burglar, that one evening after clumsily breaking into the house of a family who were away, and

gathering together some useless knicknacks, he switched on the lights, lit a cigar, and was pouring out his soul in rhapsodical improvisation at the piano when he was interrupted by a policeman pressing the muzzle of a revolver against his temple.

He "got the limit".

A surgical operation relieving his brain of the pressure from that bony indentation might or might not have cured him of his kleptomania. No one knows, because no attempt was ever made to determine. Technically, he was guilty. Morally, we may be, for neglecting to attempt to cure him.

In Philadelphia a great surgeon, with the human equation keenly developed, is operating from time to time upon boys who are sent to the reform school for unlawful acts. One little chap, with a penchant for burning houses and barns (he burned quite a number before he was finally captured), came under the surgeon's notice. A trephine operation was made, a small circular button of the skull removed, and a silver plate placed over the opening, and this boy's pyromania was completely eradicated.

Unfortunately, these operations, like certain others, guaranteed to prevent hereditary criminals and degenerates from being born, are rarely performed, owing to the prejudice of an insufficiently enlightened public.

There is a little shield-shaped body situated deep in the lower part of the throat called the thyroid gland. It is a true ductless gland, that is, a gland the secretion of which doesn't seem to be carried off, except by absorption. An insignificant looking little thing, this thyroid, with two lobes hugging the windpipe, each about two inches in length. It weighs in health about an ounce.

Ordinarily you wouldn't give two cents for a barrelful of them.

But this same little organ, in ways not yet determined, exercises a most profound effect upon the well-being, or otherwise, of its possessor. Congenital lack of the thyroid, or shriveling up (atrophy) of the organ, causes that distressing condition known as cretinism. These pitiful, thick-tongued disproportionate-headed dwarf imbeciles or semi-imbeciles bear mute evidence of the value of the thyroid secretion on metabolism or nutrition.

But the thyroid also influences ethics and morality. A physician recently told of a patient, who was a successful man and had become mayor of his city. He married, and a year and a half after the wife came to him and said:

"Doctor, since you performed that operation in my husband's throat he is a changed man. He has become a thief and a liar, and his temper is terrible, even brutal. I don't think I can live with him."

The doctor had removed the thyroid. However, he supplied from a sheep this same substance, and in six months his patient was again a good citizen.

Had the mayor strangled his wife or burnt down the house when in this condition, how should he have been dealt with? Isn't it rather startling to think that during all this time the man was understudying Mr. Jekyll, the governor of his moral dynamo was capering nimbly over the landscape under the wooly hide of a sheep?

Certain other organs, by reason of old age, injury, disease, or removal, powerfully influence a man's moral viewpoint. He may become effeminate, or even indulge in unnatural things.

Why should not allowance be made for these conditions? Why not, instead of con-

fining him in a penitentiary, send him to a sanatorium?

Every once in a while some victim of hashish or cocaine accumulates such a quantity of the drug in his system that reason is temporarily overthrown. He "sees red" and, overcome by an irresistible desire to kill, "runs amuck", murdering or wounding whoever is unfortunate enough to get in his path.

Everyone is familiar with phenomena of similar character accompanying alcoholic poison—alcoholic mania, we call it. The horrid fear, the heartache, and the misery these maniacs cause is the grim heritage, the black beads of sorrow which their wives and dependents tell over and over again with tear-filled eyes, pallid lips and breaking hearts. What should be the exact status of these individuals?

Another thing: We are only beginning to recognize the profoundly depressing effects of poisons generated by putrefactive decomposition in the intestines. One of the most toxic of these poisons is indican, almost as deadly, if isolated and concentrated, as is curari, which certain savage tribes produce in a somewhat similar way; only, instead of rotting the substance in the bowels, they putrefy a piece of meat or a dead carcass in the sun. Into this mass, they thrust their arrows and spearheads. The slightest wound from these weapons is then almost inevitably fatal.

The absorption into the circulation of products of decay lowers vital tone, and creates a morbid state of mind. Sometimes the depression is so pronounced that nothing short of death seems to offer relief, and the poor fellow tries suicide as a means of escaping from his ten thousand visiting devils. If we catch him before he has finished the job, we fine or imprison him,

instead of correcting his diet and clearing his system by proper elimination, thereby curing him.

Some acts, the nature of which can only be hinted at, are more common than the uninitiated have any idea. Almost daily, crimes are committed, varying in degree from snipping a child's hair to murder and mutilation in their most horrible forms.

These murderers, while they may seem thoroly sane on all other matters, are unbalanced in their attitude toward sex. Many of them have paid the penalty of their iniquities with their lives; while in reason, they are no more accountable than they are for the color of their eyes or the shape of their heads.

How are criminal offenses committed under the influence of overwhelming passion to be differentiated from crimes due to the frenzy of temporary mania? Why punish men for actions for which they are no more responsible than is a mad dog for biting? How should we regard the victim of satyriasis or nymphomania?

Millions of ill starred humans are born from weak, vicious, depraved, alcohol-saturated parentage. They are sick, morally, mentally, and bodily. They have been brought up in an environment where vice is the usual thing; sobriety, integrity, chastity, and honesty, are unusual. Their companions, from infancy to maturity, are men and women who are unclean, immoral, and villainous. They are subject to the never-ceasing suggestion and example of vice, sin and iniquity. These unfortunates are criminals born and made. So where do free will and rationality leave off, and irresponsibility and irrationality begin? How shall we bring law more into accord with the law of nature? The jurist cannot decide these questions alone. Nor can the

criminologist give him the necessary facts. They must work in conjunction with the medical expert. The first step must be in dissociating honest differences in opinion from rank quibbling trickery, and deception. Expert evidence must become honest in order to have authority. These are difficulties in plenty in the way, especially when it comes to questions apart from surgery. Surgery is more or less in a realm of exact science.

When a surgeon cuts away part of the skull that restricts the proper development of the brain and transforms a cruel or irresponsible child into a normal being, we understand that something tangible has been done. When a specialist removes a soddening, stupefying influence with the adenoids that caused it, we are not in the least surprised. When slight operations remove the source of irritation, and a morally depraved child becomes wholesome and natural, we no longer marvel. These results are only what our experience has taught us to expect.

But medicine is not an exact science, purely medical cases, and those peculiar "twists" with which the nerve specialist has to deal, are much more obscure. There is a wide range of difference in opinion between experts—perhaps honestly founded—as to just what extent certain conditions may influence criminal actions. So that under our present system of "testifying" they seem much more eager to establish a point than they are to demonstrate a fact.

Now is it not probable that a nearer approximation of the truth might be secured if, instead of depending upon men who are biased in favor on the side that has retained them, we submitted all questions of a medical nature to a tribunal of three or five physicians appointed under Civil Service

procedure, or elected, possibly by their local medical body, because of peculiar fitness for this work; these men to become experts in fact, not for hire—masters of the sciences of sociology, criminality, insanity, pathology, and everything bearing upon a deeper appreciation of and familiarity with problems that they will be called upon to define, analyze and solve? These experts would take the last work of the world's greatest authorities as a basis for their deliberations, having for their guidance all memoranda connected with vigilant observations and exhaustive study of physical and mental defects in the criminal.

Then, with all physical, chemical and pathologic means of their command, to enable them to weigh every scintilla of evidence, removed from the grueling insulting quibble and fence of the attorneys, seeking the truth with every means that science affords, if a majority of these specialists presented to the trial judge and jury their opinions as to the responsibility or irresponsibility of the culprit, it would be received with respect, and mark a dignified and honorable departure from our present system.

This medical body could be granted power as court officers, somewhat similar to that of a master appointed to hear evidence in a divorce suit, making a public report to the Court and to the press as to its findings; this report to be received as final, so far as medical testimony in that particular case was concerned.

This will safeguard the public, and assure fair play for the criminal without means to employ "experts", relieve the medical profession of the odium of untruthworthiness under which it now labors, and place expert medical testimony upon the high plane where it of right belongs.

THREATENING ATTACKS FROM THE STOMACH.

BY

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New York City.

Quite often we read accounts in the daily papers of someone, old, or of middle age who has died suddenly of an attack of acute indigestion. As a rule, it is also stated that there were symptoms, or a history of heart trouble. No doubt, the latter is true not infrequently and without it the patient would not have died at the time mentioned despite the digestive disturbance. Again there are not a few cases where loss of consciousness occurs and after a few moments, or a somewhat longer time, the patient recovers and is about as usual, with merely the knowledge of his previous attack.

The heart may, or may not show, manifest functional disturbance, but with a little careful dieting and an appropriate tonic with a little nux vomica, or the glycerophosphates, things shortly right themselves. The urine may show if carefully analyzed a little albumen and a few hyaline casts. That is about all. Quantity, specific gravity, reaction, elimination of urea, etc., show nothing special, or abnormal.

I have seen not a few of such cases in men of middle age, or in the female sex when younger. In some instances where there is no loss of consciousness there is simply vertigo which may recur from time to time and is the cause of much anxiety to the patient, until relieved by a little sensible treatment and advice from an all around practitioner.

If the latter be one of the younger generation and he has imbibed thoroly modern ideas, he will be apt to take blood-pressure more than once and dwell upon the probability of arteriosclerosis. There may be,

it is true, increased tension in the arteries and it may not always be explained by excesses in work, or eating—or indeed, due to anxiety caused by the examiner and his instrument—but in any event, it will not be helped much, if at all, by needless, unnecessary and perhaps, harmful precautions.

I am one of those, who have seen many persons who were demoralized utterly, for many months, not to say years, by inuendoes, or statements as to their bodily ailments and the possible, or probable outcome of such. Alas, the pity of it!

I often think nowadays of the great clinical wisdom of a number of my former preceptors, or colleagues, but no one, I believe, in this connection stands out more prominently than Rousseau. I urge everyone of my younger colleagues to read his clinical lectures,¹ delivered at the hospital, Hôtel Dieu, Paris. They are old in time, but they are as true and valuable today, as they ever were—and none can go astray in reading them more than once.

My advice to all those who come under the head of my brief article, is to eat moderately of any simple food that suits them, to ignore all fanciful and extreme dietary regulations and to take one or more tablets of tincture of strophanthus, made for hypodermic use, under the tongue, whenever they have such an attack. If unable to take the tablet oneself, instruction should be given by written or spoken word previously, so that the only valuable emergency treatment should be used immediately. The tablets must be of one minim of the tincture in each tablet and they should always be carried in the vest pocket, or in a small purse in a lady's handbag.

¹ See *Vertigo a stomacho laeso*, Vol. 2, p. 355, published by Lindsay and Blakiston, Philadelphia, 1873.

ON THE CALCIUM ION

BY

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It has long been known that calcium ion is of value in checking diarrhea. Taken in excessive quantities it produces constipation. Prepared chalk, which when taken into the stomach and converted into calcium chloride, is extensively used to control diarrhea and dysentery. Chalk is an effective antacid and valuable in the treatment of gastric hyperacidity. The objection to its continued use, however, in such cases, is the constipation that results. Magnesium carbonate, the antacid so commonly employed in gastric hyperacidity, is distinctly laxative. And where this is objectionable, as it often is, the two combined may be administered mixed in equal proportions, thus producing neither a laxative nor constipating, but merely the antacid effect. No matter what calcium salt is employed, constipation follows—the more soluble salts being more efficacious than those which dissolve but sparingly. And while chalk, *per se*, is insoluble, it is converted to a very soluble form (calcium chloride) the moment it comes in contact with the hydrochloric acid of the gastric juice.

The value of calcium ion in the circulation, in order that blood may have a normal coagulating index, has also been known for some time. Thrombin causes blood to coagulate by converting dissolved fibrinogen into insoluble fibrin. Pope believes the change takes place as follows: When the blood leaves the body, one of its constituents (probably the leucocytes) gives rise to a pro-enzyme, which is converted into the active enzyme under the influence of calcium ion. Gurber says that acid calcium phosphate is dissolved in the fluids of the

body and that the calcium ion aids in the formation of fibrin ferment.

It is now a matter of common practice for surgeons to determine the coagulating index of the blood preceding operations. In case it is found to have a low coagulating index, the patient is given doses of a calcium salt repeatedly until the coagulating index has become normal or at least materially increased. Serious hemorrhages are frequently avoided in this way. Of particular importance is this in connection with mastoid, tonsil, or other operations in which there is danger of serious hemorrhages. In this respect the calcium ion is considered as a hemostatic and it is probably the only substance known which will increase the formation of fibrin ferment.

The proper coagulating index of blood is an important matter also, insofar that the blood-cot, when normally and quickly formed, seals the wound and protects the granulation tissues. In this way it also prevents infection.

Another important function of the calcium ion in the human body is that it increases phagocytosis. In fact, Fischer and Riethmuller have concluded that, besides calcium ion no other substance is capable of increasing the phagocytic action of the leucocytes. Hamburger has found that while calcium has a stimulating function on the heart, sodium exerts marked toxic effects. And Sticker has demonstrated that the phagocytic action of the leucocytes is also impaired by the toxic action of sodium, but stimulated by calcium. Chiari and Januschke have found that the calcium salts have a remarkable action in reducing inflammation of tissues. Leo substantiates their findings, and regardless of the bacteria selected his results were all positive. His conclusion was that the calcium ion does

not exert an influence against the phlogogenic organisms, but serves to strengthen the resistance of the tissues against the influence of these bacteria.

Gurber, after experimenting for years with the action of calcium ion upon the blood, added to injected solution, found that it is of prime importance in increasing the resistance of tissues to infectious diseases. He found calcium chloride measurably increased phagocytosis in weak solutions (0.01 per cent.), in which solution it is completely ionized. The more concentrated solution he found less effective—in fact, excessive amounts decreased again the phagocytic action of the leucocytes.

From these interesting findings it will be seen how important it is to maintain an equilibrium between calcium assimilation and elimination. Moreover, it is easily seen how calcium malnutrition will produce such conditions as rickets, osteitis, osteomalacia, osteomyelitis, dental decay and many other diseases. The extreme prevalence of dental decay may, to some extent, be accounted for by the present-day diet from which calcium compounds are largely eliminated by modern methods of preparation. Investigations by Sherman, Bunge, Kellogg and others indicate that a very large percentage of the civilized race is suffering from calcium starvation because many people are eliminating each day more calcium compounds than they take into the system with their total daily food supply.

Again, from the above findings, it will readily be seen how valuable soluble calcium salts are in treating inflamed tissues. Particularly is this true in dentistry in treating irritated and inflamed gum tissue. Calcium ion increases the resistance of the gums to phlogogenic organisms. It increases the coagulating index of the blood and it causes

the immediate formation of blood-clots to seal the wounds, to protect granulation tissue and to prevent infection.

For this reason calcium chloride, in the proper dilution, is a very important ingredient in tooth paste and mouth washes. It is a hemostatic and antiphlogistic. It reduces inflammation and overcomes bleeding gums. Moreover, it does not introduce into the mouth foreign ions, for both calcium and chloride ions are found in normal saliva.

Now that dental investigators are agreed that tooth pastes and mouth washes must be mildly acidic in reaction, calcium chloride may easily be incorporated with marked beneficial results. In fact, dentists should insist that their patients be supplied with dentifrices and mouth washes containing this important salt. Tooth pastes and mouth washes containing the proper amount of calcium chloride have been found noticeably efficacious in overcoming bleeding gums.

The fact that science has proven that mouth preparations must be mildly acidic is rather co- incidental in this connection, for calcium chloride cannot be incorporated in alkaline preparations. Being an acid salt—a combination of a strong acid and a weak base—alkalies, particularly soaps, decompose it and destroy its action.

Thyroid Medication for Nephritis.—

Clinical evidence shows a disappearance of albumin, blood and casts in certain forms of nephritis, states Thewlis (*Medical Review of Reviews*, April, 1923) and especially in incipient cases, after thyroid medication.

Kill the mosquito, destroy the house fly, and you have disposed of yellow fever, malaria, and much of typhoid and septic infections, except when they are communicated by direct carelessness.

BE TRUE TO YOUR TOOLS, AND YOUR TOOLS WILL BE TRUE TO YOU!

BY

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The gods do not change their weapons. For ever is Apollo lord of the unerring bow.

At once and frankly will it be admitted that Apollo's golden bow is somewhat out of date—indeed, quite a back number. A sorry showing, forsooth, would it make matched against "75's" and "big Berthas" and bombing planes. Their conservatism as to their arms it may have been, perchance, that cost the gods their jobs—that occasioned their flight from the Olympian courts, sunshine-flooded and serene, to the places and conditions of degradation where eventually Heine found them in hiding! And yet, nevertheless, how superbly Apollo shot his shafts! And Ares, how mightily he swung his sword! And Athene, how certainly to her mark she drove her spear! And Zeus, the enthroned one, of his aim sublimely sure, how awfully hurled he his thunder-bolts!

The foregoing mythologic allusions and comments are introduced thus prefatorily with a definite purpose. In this paper as a main end the writer would deprecate the tendency to immoderate and indiscriminate eagerness for new medical agents and measures. At the outset he wishes to anticipate criticism of a certain character by forthwith advocating, first, the scientifically directed and guarded pursuit of therapeutic investigation and experimentation, and, second, the acceptance of real improvements and valuable discoveries.

Indicative of stupidity and purblindness would be any attempt to gainsay the propriety of endeavor toward the betterment

and extension of the means of healing. Nor would it be fair or wise to deny initiative in the matter to the physician in private general practice. Several epoch-marking additions to the medical armamentarium have been due to the keen, shrewd observation at times of some wide-awake, every-day doctor. Indeed, upon him solely rested the burden of advancement prior to the organization of highly systematized hospitals and the instalment of finely equipped laboratories. But results thus reached are very liable to error—the method constantly tends to lead astray, chiefly by mediation of the old logical deceiver, *post hoc, ergo propter hoc*.

At this latter day, however, the places most fit for the carrying forward of such work of research and experiment are the great clinical centers and technical institutions with their marvelously perfected equipment. Here principally should the problems of therapeutics be wrought out and tried out—here where material is abundant, and where rigid and searching systems of checks and proofs are available. Hither should the physician in private practice turn for the last word on these questions—the final verdict. From hence should the law go forth. Here, too, should the general practitioner refer his personal theories for probation. He cannot, and he ought not try to, attain in his own limited field conclusions ultimate and decisive.

Will it be necessary for the writer to make profession of faith in progress? Self-evident are the wisdom and obligation committing a doctor to the adoption of a new agency of healing when it meets an actual and unfulfilled need, or when its just claims to superiority warrant it as the supplanter of an old one.

Hoping by these statements to have fore stalled flank and rear attack upon the posi-

tions assumed, let us proceed to the presentation of our main thesis—be true to your tools, and your tools will be true to you. The essential, the indispensable thing is to know your instrument. If you stick to it, are loyal to it, you *will* know it. Surely, accuracy, skilfulness, effectiveness in its employment come from tireless practice—are the result of continued, persistent use. Thus acquainted with a remedy, you exactly know what it will do, and what to do with it. You know how much possibly can be administered with safety—that is highly important—a medicine may disappoint because too little is given. You know the range and regulation of dosage—an expert toolsman will not choose a sledge to drive a tack, nor attempt to drive a rail-spike with a tack-hammer. You know, and you can do. Oh! Apollo!—Apollo! what a glorious archer you are! Of Springfield rifles you ken nought. But let all beware of that bow of yours. Your arrows never miss, and never fail.

Straying thru a forest, the re-echoing sound of distant axe-strokes reaches the ear. Far, so far apart they seem—a laggard must be yonder axe-man. We approach, and come upon a sturdy woodsman at the base of a giant oak. Ah! no weakling, no sluggard he! Assurance is on his countenance and in his mien. There he stands, the oak's master. With slow, but rhythmic recurrence, down sweeps that axe, every stroke true to a hair, at each descent the axe-blade biting deeply into the vital wood. Telling blow on telling blow is dealt, until at last the stately monarch sways his head verdure coronalled, topples over, and crashes to earth. And beside the rugged trunk of the prostrate giant, leaning on his axe-handle, now rests the woodsman, a victor, a conqueror. The man and the axe are one. And so let it be with the healer

and the instruments of his art.

Insistently are we warned that the day of the old-time family doctor nears its close—that it is passing into its gloaming. Alas for folks when his night comes! But if come it does, yet for him must there be a morrow—if Baldur dies he will live again. And in the practice of the family physician constancy in the use of remedies has a particular pertinency. Individual idiosyncrasies as to the action of medicines will thus be determined, and afterward made allowance for—help to the patient being rendered thereby less tentative and more direct.

Such is the positive bearing of our theme. It, also, has its negative aspect. Not only have solidity and fixedness of therapeutic procedure notable advantages, but, on the other hand, capriciousness, fickleness, fadishness in the choice of medical means and measures involve signal disadvantages. To touch only upon generalities, it may be said that the unbecoming chase, or scramble, after the rare and novel in therapeutics is a spectacle to make the gods laugh, and the angels weep. Brought to mind are certain lines of an old song, "Shells of Ocean":

"I stooped upon the pebbly strand
To cull the toys that round me lay;
But as I took them in my hand,
I threw them one by one away."

Such lack of dignity, of composure, of poise, of acumen must inevitably entail upon the science of medicine a strong suspicion of instability and unreliability—must render the healing art a by-word and a reproach, and healing itself a mockery.

The frenzied exploitation of remedial innovations and fashions has another and uglier phase. It carries with it the odious suggestion of mercenary motive—of cunning self-advertisement and inordinate self-seeking. It constitutes a subtle, insidious quackery—not a blatant whole-charlatanry,

but a bland and insinuating half-charlatany. Now a half-quack is like a half-flapper. A flapper outright is a caricature—a preposterous, a grotesque freak. But a half-flapper may be perfectly charming, entirely irresistible. Still the flapper in the half-flapper is genuine flapper, and the quack in the half-quack is pure quack. It is for every doctor to face himself as his own judge—to honestly answer to himself whether charlatany in any degree is worth while, or whether in the end it will prove an apple of Sodom. In the valley of decision he must meet this question—Shall I keep the vows I have taken in the temples of science and of truth?

A PHYSICIAN'S TRAVELS IN CENTRAL AMERICA.

From Puerto Barrios to San Jose, Guatemala, in Five Days.

BY

E. S. GOODHUE, M. D.,
Kaunakakai, Molokai.

We had gone from the gayety of the Palma Hotel at Puerto Cortez, away from the sweet music of the *Marimba* where American, Creole, Spanish, Mexican, Honduran and Guatemalans joined vigorously in the festivities of the Armistice Dance, across a stretch of morning sea, around Monabique Island, into the Gulf of Amatique and Puerto Barrios, the northernmost port of Guatemala.

Here we arrived in a rain too late to take the only train of the National Railway of Central America which runs to San Jose, the extreme southern Pacific port of Guatemala.

But the next day being as good as today for the native, had to satisfy us, and we left

in a fairly comfortable car for the long journey by rail, over country which can hardly be excelled for romantic beauty and, in many places, magnificent outlook.

It is not far northwest from Puerto Barrios to the mouth of Rio Dulce, up which steamers ply thru interesting forests and by palisades said by some to be as beautiful as those of the Hudson. The river drains Lake Izabel which itself is worth seeing. As to the comparison, I shall not make it, because it might be "odious," at any rate, incorrect. To compare Niagara, or Yosemite with anything else would be to give hostages to description. It would be something like comparing Bunker Hill to a well-baked pie.

The journey thru Zacapa, where we stopped for luncheon, was interesting, altho the section is regarded as "desert." As in nearly all tropical lowlands, there were extensive areas of banana lands, then forest jungle and, finally, as we climbed a grade of three per cent., new flora with more wild flowers than we had ever seen.

At Zacapa, about half way to the capital, the scenery changed, and we had smaller trees, many varieties of cactus, the calabash tree, and shrubs belonging to the Terminalia.

From Zacapa there is a proposed railway to Santa Ana in Salvador, but owing to some misunderstanding, the building of the road has been delayed. From here in a day one may reach the famous Mayan ruins at Copan. As we had already visited those of Quirigua, we did not take these in but made ourselves acquainted with the town, which is rather typically Latin-American.

We reached the capital just after dark, after crossing a bridge 700 feet long suspended over a chasm 275 feet deep. We had already passed over several other bridges, climbed steep grades, traversed tun-

nels—the whole journey being one of extraordinary interest. Altho the dry season had begun, rain came on at night. All the next day it rained, much to the embarrassment of our friends who had told us that it "never rained" at this season. But we understood the vagaries of weather, for had not our assurances as to the conduct of Hawaiian weather not often failed to materialize? It is like the whim of a

Thru the kindness of Mr. William G. Carey, a representative of the American Press Association, who acted as interpreter, I had an interview with Dr. David Piviral, Minister of Agriculture.

We were invited to visit the new Agricultural College just outside of the city, which we did in the afternoon. There are some 80 acres on the experiment farm, and the new buildings, laboratory, library,



FIG. 1. A Group of Guatemala's Fair Women.

trained dog or the mood of a child when we wish to show him off.

I had a very pleasant interview with Sr. Don Dr. Racinas, Minister of Foreign Affairs, and we thoroly discussed the question of closer relations with the great northern republic. Dr. Racinas is a scholar, the author of several books on philosophy. He is as yet a young man. It is now the policy of the Central American republics to use their young men in the administration of public affairs.

boarding-houses and dormitories, would do credit to any country. About 200 students attend, 120 Indians, the remainder being Guatemalans. Cost of tuition and board, 28 pesos a month (\$14). In the library one portrait only was on the wall, and when I looked upon the face of Theodore Roosevelt, Dr. Meza, the Director, remarked: "He is my ideal citizen. Here in Central America for my students to see daily, this hero has been selected from among the many we admire."

I have found everywhere in the republics, among all classes, German, English, Spanish, American and native, a profound admiration and respect for Mr. Roosevelt.

In every place always we have met with the most cordial friendliness. American residents have urged us to stay longer where we were entertained and, at one house, offered us passes over the railroads if we would stay two days longer to attend a reception!

gentlemen if we do not respect the beliefs and customs of the people in whose country we are aliens and intruders. The ordinary "globe-trotter" often uses the country and conditions he visits as if it were his "lemon." English or American, he is not representative. He is *suigeneris*, and generally wherever he goes, *persona non grata* for very good reasons.

During our stay in the capital we were housed in a building formerly occupied by



FIG. 2. Vista Parcial de Tegucigalpa.

The higher officials have been kind, and we feel that the trivial annoyances incident to travel in a "pioneer" country—delays, customs, officiousness of small men "in brief authority," should not be emphasized if mentioned. Just as I assured the President and some members of his cabinet, we should not be judged by the few rude Americans who come here, swagger, keep on their hats in places where ordinary courtesy should induce them to uncover, and play the part of the boor.

While Americans may not place undue stress upon mere externals, we are not real

a vice-president of Honduras. It was built of adobe, Spanish style, with deep windows iron-barred, heavy doors locked by immense iron bars and a great key. There was a passage into the spacious *patio* large enough to admit three pack-mules abreast (they came in with charcoal to the kitchen), and all the rooms opened into the out-door *patio*. The floors were of brick, the walls, plaster, calsomined, the high ceilings wood.

Our street—Cervantes—ran between high concrete walls, perforated by windows and doors which opened, as might be, into the most charming interiors, furnished with

expensive pieces—colors, pictures, statuary, rugs, all arranged with exquisite taste.

Most of the houses have telephones, electric lights and other modern conveniences we regard as American.

The shops have Victrolas, radiographs and Rochester kodaks. One night we attended a dance at the Wireless Station, where we heard music from Habana, New York, Austin, Tex., and New Orleans. From here a few days previously the President of Guatemala had sent a message to the President of the United States. The station was established and will be maintained by the United Fruit Company, which will supply the city with news from abroad.

Despite entreaties and protestations over our short stay, we left our Guatemala friends for the Pacific port of San Jose. At Escuintla we got off for a bite and two hours' wait. It lengthened into five hours, each extension being announced half hourly, the proclamation meeting with laughter and jokes on the part of the Honduran passengers who, evidently, have a sense of humor.

All along thru the jungle were villages of palm-thatched huts most picturesque. The residents grow fruits, corn and vegetables, which they offer for sale as the trains go by.

At San Jose, a tropical port at which steamers from San Francisco call, we took the "San Juan" of the Pacific Mail Steamship Company on her way to Panama, embarked in a box seating four, and were swung midair from the wharf to the lighter. This, let me say, is an easy, safe and much better way than trying to get down a ladder or gang-plank into a bobbing boat, as we generally do in Hawaii. The next day we landed at Acajutla, Salvador, in the same way.

Acajutla, El. Salvador, C. A.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

X.

"Such an odd dream I had," announced Pattia, the aged mother-in-law. "The night was clear, and I am perfectly well. It fore-shadows coming evil."

"Ram save us! What can it be now?" exclaimed Mohini, her daughter-in-law, who sat on the floor cleaning rice in a tray-like basket. Beside her lay a baby asleep, while two little girls, wearing only long, dark skirts, amused themselves outside by pulling the floppy ears of a goat.

"Sickness, I suppose, or another girl," was the tart response. "The rains are yet too far off for us to expect a drought."

Mohini sighed deeply, but did not speak. During the ten years since she had come to this house, a child wife, she had learned that upon her lay the responsibility for all the family misfortunes.

Next morning the significance of the dream became clear. Mohini's husband, Dherwa, woke her with his moans. "My head, oh my head!" he cried.

Pattia, sleeping on the back side of the bed, was instantly alert. "What now?" she exclaimed, sitting up.

"Mohini sneezed last night before we went to bed, at my left side," wailed her son. "I am going to be very ill."

"When will you learn how to sneeze?" upbraided the old woman.

Mohini was unloading the three children from the bed. She made no reply.

"I heard a crow caw in the night, too," detailed Pattia. "Oh, you are going to die!" She flung her arms around her son in a panic, and rocked him back and forth.

"Go for the *hakim*," ordered Dherwa. "I must have medicine."

Mohini went.

"It is the worm in his forehead," diagnosed the *hakim* gravely. "Something has disturbed it. It must be quieted. Here!" addressing Mohini, "Bring a little water in a brass dish and wash your hands."

He watched her closely as she bathed her hands, then extracting a bit of opium from a rag in his basket he dropped it into a cup and added the water.

Dherwa drank the dose gratefully. When he awoke he declared himself nearly well. In the night, however, he grew worse, thrashing about the bed so vigorously that no one else could lie down.

During the day he slept, but the next night was one of wild delirium. At its height, he shoved the children, his wife and his mother outdoors, and dragged the goat into the bed with him.

Neighbors advised calling a famous Brahman medical man from a nearby village. Pattia consented, regardless of expense.

In preparation for his coming, Mohini washed the floor and walls of the mud hut with cow dung solution, and hid the three

"By night. He becomes exceedingly violent."

"Possession," he muttered, seating himself with much ceremony on the floor. Deliberately he scratched a circle in the dry mud with his long thumb nail, extracted a pair of dice from a corner of his loin cloth, and threw them in the circle.

Bending low, he studied the dice for several minutes. "A powerful spirit possesses him," he announced at length. "It is displeased with some act of his wife. Where is she?"

"Here," said Pattia, pushing Mohini forward. "I knew she was at fault. She sneezed at his left on the night before he fell sick."



(Courtesy of Presbyterian Board.)

FIG. 1. Measuring Their Length.

girls in a house at the far end of the village. Pattia went to the river to bathe and wash her garment.

At noon the great man arrived. Clad in a muslin cap and loin cloth, with the sacred cord of the Brahman over his left shoulder, he strode haughtily down the village path behind the naked urchin who was his guide.

Pattia fell to the ground before him and kissed his bare feet.

"Who is sick?" he demanded.

"My son, my only son, Dherwa. Medicine does him no good. Oh, do not let him die!" she pleaded.

"Is he worse by day or by night?" asked the inspired one.

"Right! The cure rests with her."

"What must she do?" asked Pattia eagerly.

"She must carry an offering to the shrine at Kindra. Let her measure her length from here there. The *mela* begins next week Thursday. This is Tuesday. She will have time to get there if she hurries."

"How much must she take?"

"Not less than five *rupees*. My fee is two *rupees*," he replied loftily.

Turning back to his dice, he crooned a few words, then swept them up, and obliterated the circle with his hand.

* * * * *

"Keep still! Let your mother alone!"

Pattia scolded the little girls. "She is going to get your father all well."

Mohini, lying on her face, stretched her hands straight in front, made a mark in the dust, drew up her feet to this mark, and stretched out again.

"You are doing all right now," encouraged her mother-in-law. "Just keep it up as well as this all the way."

"It is not easy," remarked Mohini.

"Easy! The spirits are not propitiated easily! Go on now, and do not loiter.

"Surely the great god will notice us," remarked one of the women, as they paused at a well. "I must have a son, or my husband will take a second wife."

"My baby boy is very ill," chimed in another. "There are four girls older, and if he dies, I shall not wish to live."

In this company Mohini no longer felt obliged to travel at top speed. The men kept tally of the distance still to be covered, and declared the amount of rest they could take each day.



(Courtesy of Presbyterian Board.)

FIG. 2. Holy Man at the Mela.

Keep your face covered. Watch that you do not lose the money."

Hour after hour thru the stifling dust traveled Mohini at her worm-like gait. Toward the end of the second day she came out upon the main highway to Kindra. Here were many pilgrims measuring their length, and they welcomed her heartily.

Remembering Pattia's injunction, she kept her garment drawn across her face, for the fellow pilgrim at her side was a man, and every passing group of men stopped to watch them.

As they drew near Kindra, the throngs on the road became denser and the hot dust more suffocating. Early Thursday morning they reached the outposts of the sacred place. Pausing for a moment to investigate a crowd, they found a holy man squatting on the ground, with his hands in an attitude of supplication behind him, his shoulders quite deformed by long years of this self-torture. Each one in the little band of pilgrims drew out *pice* for this individual, and Mohini followed their example. It was her first visit to a *mela*, and she felt that in some way this

holy man would help to restore her husband.

At the temple shrine she offered all her remaining money, something over six rupees, and prayed earnestly that her plea might be heard. As she prayed, her heart grew light with assurance.

The return trip required but one day. Leaving her companions by the wayside, Mohini hurried thru the glare of the noon-day without rest. In spite of the joy of a mission accomplished, she was oppressed by the haunting fear that she might find herself a widow. She shuddered at the thought of her lot.

As she came into the village, she spied Dherwa sitting outside the hut, placidly smoking his hookah.

"You have done well," he said, without stirring.

His mother came out to greet the weary traveler. "The Brahman was right. You were at fault, for the very day after you started for the *mela*, the spirit left him, to follow and watch you."

effect—in fact, the evidence seems to show that an adequate supply of carbohydrate is most important in the treatment of such cases, and that in view of the known deficiency of glycogenic function, this supply must mainly be available in the form of sugar in the blood and tissues. It is noteworthy that the reduction of the blood sugar was not always accompanied by such an increase of the respiratory quotient as might be expected if the sugar had been burnt. Determination of respiratory metabolism in emotional subjects may not give a proper indication of the true respiratory quotient owing to irregularities of the breathing. Yet in such cases as these there is another factor to be considered. The liberation of alkali in the blood consequent on the removal of the ketone bodies would result in a compensatory retention of carbon dioxid. This might easily be sufficient in amount not only to mask any rise but even to produce a fall in the respiratory quotient.

Thyroid and Motility of Intestines.—Deusch (*Deutsches Archiv fur Klinische Medizin*, March 30, 1923) emphasizes the almost constant obstipation in cases of hypothyroidism. The slower action seems to be localized in the colon. One of his patients suffered from three periods of obesity with constipation, recurring in winter. Thyroid treatment ameliorated both conditions. He experimented with different preparations from the thyroid (no thyroxin) on pieces of guinea-pig and rabbit intestine, on living rabbits with Katsch's "abdominal window," and by means of Roentgen rays on men. He found that the thyroid preparations increased the tonus of the intestinal muscles and lowered the threshold for stimulation of peristalsis.

Deficient Thyroid Action.—The recent widespread interest in endocrinology, says Snell in *Minnesota Medicine* (August, 1923), has given the medical profession a new incentive to the study of disorders of growth and metabolism. Unfortunately there has been a great deal of extravagant theorizing associated with this study, serving to bemuddle the rather scanty amount of exact knowledge that we possess. Swale Vincent, Cannon and others have called at-



Effect of Insulin on Acidosis and Lipemia in Diabetes.—This problem has been studied by Davies and his associates in four cases, as it was considered advisable to make observations on cases with a moderate degree of diminished bicarbonate reserve in order to have a comparison between normal people and diabetics without any such reduction and those cases showing evidence of impending coma. The results obtained which are reported in the *British Medical Journal* (June 19, 1923) in these cases seem to indicate that insulin and carbohydrates, when given together in sufficient amounts to patients with diabetic acidosis, verging on coma, have a most beneficial and, indeed, spectacular effect. The rapid disappearance of the lipemia and ketone bodies of the blood, and the return to normal of the bicarbonate reserve, clearly indicate the means whereby this improvement is brought about. In one case, great increase in the blood sugar did not appear to have any deleterious

tention to many of the fallacies in reasoning regarding the endocrines, and emphasized the fact that further experimental data are required before even some of the widely accepted views on the subject can be confirmed.

The hypothesis of thyroid function is supported by much sound clinical and experimental evidence; we have accurate methods of laboratory diagnosis in thyroid disorders, and in the treatment of hypothyroidism we have a specific substance at our command. However, not all disorders associated with lowered basal metabolic rate are hypothyroidism, and neither is a condition necessarily due to primary hypothyroidism because it is benefited by thyroid feeding. The true primary hypothyroid states are relatively uncommon, and, probably for that reason, frequently escape diagnosis.

In this article the author presents a group of proven cases, and emphasizes certain points in their diagnosis and treatment. The cretins and one case of myxedema were observed on the service of Dr. L. G. Rountree at the University Hospital, and it is thru his courtesy that the author is able to report them. The other myxedema patients were seen in Snell's private practice.

According to Plummer the primary hypothyroid states are classified as: (1) That which follows faulty prenatal development or destruction of the thyroid, cretinism; (2) that which follows post-natal destruction of the thyroid, myxedema; and (3) the status in which the thyroid temporarily does not (because of functional disability) respond to the demands of the body. He considers the true criterion of hypothyroidism to be the appearance of edema when the metabolic rate falls lower than minus 18 per cent.

Excision and Grafting of the Suprarenals.—Willems and Goormaghtigh in their valuable paper read at the recent meeting of the International Congress on Surgery (*Journal A. M. A.*, August 11, 1923) said that the excision of one of the healthy suprarenals, with the idea of lessening the amount of suprarenal substance, had been performed, especially for epileptic fits, as some physiologists believed that the convulsions depended, not on the central nervous system but on the endocrine glands. The results obtained were interesting, but the

problem was far from being solved. The suprarenal had also been removed for hypertension. Of the two methods of removal, the transperitoneal was not handiest. The retroperitoneal was better, being more accurate and giving the required view. Mr. F. C. Pybus of Newcastle-on-Tyne reported a successful case of suprarenal grafting for Addison's disease. The patient had been discharged from the hospital as incurable, and was at the point of death. The graft was obtained immediately after death from a healthy man, killed by accident, and was immediately inserted into the subcutaneous tissues of the patient. The blood-pressure rose, pigmentation disappeared, muscular power was restored, and the blood picture, which had been that of pernicious anemia, returned to normal. The patient was able to return to light work for three years, when the symptoms recurred and fresh grafting was performed. No trace of the original graft could be found. In a second case the attempt to graft the suprarenal from a male on a female failed. Two attempts to graft the pancreas into diabetic patients were also unsuccessful, tho in one case there was slight transient diminution of the glycosuria.



Advancing Years and the Increasing Importance of Elimination.—The spiritual theory of old age, writes Florence Garvin, that it is the development of the spirit of the person and the recession of the body until death arrives—a process as well graduated as the development of the bud on the tree and the gradual decline of the vitality of the leaf until the life processes cease—should not blind us to the conditions which have a bearing on health.

Before 40 years of age, when physical development seems to be finally completed, the nourishment theory is of importance, but, after forty, when the body becomes static, the theory of elimination is of greater importance than that of nourishment. A gradual lessening of quantity and richness

of food, and an increase in the cleansing custom of drinking water as a beverage, is the safest program.

It is impossible to retain youthful resiliency after 40 years unless the changed condition is recognized. The saying "Old age and Youth cannot live together" is true only because of the custom of treating both alike—the circumstances of youth and old age are correlative, not similar. The experience of age is fully as interesting as the spontaneity of youth.

The disadvantages of old age arise principally from lack of elimination. Old waste matter in blood or tissue causes pain or stiffness, but it is only science that can bring people to the realization that their diet and methods of living are responsible. "Old age" is not an entity—scientifically speaking, it is nothing at all. It is merely an elapse of time.

In this field, applied psychology is of great service, for the "old age" superstition in many individuals amounts to an obsession, and until it is cast out, improvement in health can hardly be made. The Coué formula with many individuals might well be altered to say "Every day, in every way, I am growing younger and younger."

The disagreeable features of old age—whether it is the odor or the bronchial congestion—can all be helped by increased elimination. An old body does not react well to medicine but it does react to a curtailed and carefully chosen diet, and while violent exercise is out of the question, gentle exercise and manipulation bring results.

The curtailment of the diet and its eliminative character, including fresh food like fruit or fresh vegetables, and the lessening of the so-called nourishing foods like meat and milk—serve a double purpose. It prevents the accumulation of fat, which, in old age, is a handicap and makes for helplessness, and it gives the internal organs a much-needed rest.

The prevailing idea that food makes always for strength and energy should apply only to the food that can be proven in any individual to be assimilated and absorbed by the tissues. All the rest of the food taken by this individual is unassimilated and returns to him in pain and clogging of tissues and attempted escape thru skin, breathing organs, kidneys, bowels—escape hindered by tired organs.

Graduated resting and fasting must be in-

cluded in the program of the old, but, when once improvement is felt, the patient becomes interested and the program ceases to be a cross to him.

Solving the Problem of Financing the Hospitals of Great Britain.—Sir Napier Burnett, Director of Hospital Services of the Joint Council of the Order of St. John and the British Red Cross Society, has published recently his fourth annual report of the hospitals of Great Britain excluding those of London.

This report reveals the encouraging fact that an unexpected improvement has taken place in the finances of the voluntary hospitals of Great Britain. This report is for the year 1922. In 1921 the 666 hospitals under review failed to meet ordinary expenditure by £419,138, whereas last year the deficit had been reduced to £74,978. This result was due to two causes: to an increase of subscriptions and a general policy of rigid economy in the hospitals themselves. This may be regarded in the light of a vindication of the voluntary system and so the Hon. Sir Arthur Stanley, the Chairman of the Joint Committee, evidently regards it, as in an introduction to Sir Napier Burnett's report he says, "It is true that this wonderful improvement is mainly due to the decrease in ordinary expenditure, but Sir Napier is undoubtedly right in attributing the increase in ordinary income to a deepening interest of the public in the voluntary hospital movement. Four years ago, or even less, there were many of those engaged in hospital management who cordially disliked the idea of state or municipal assistance, but thought one or the other inevitable. The figures set out in this report justify the hopes entertained, on the other hand, by those who believed that the ordinary system was founded on something more than the mere transitory needs of one section of the population. From every quarter help has come, and it is a most encouraging sign that there has been no falling off in the amount received as annual subscriptions. In these days of high taxation it is obviously impossible to expect the large gifts such as the hospitals used to receive from generous benefactors before the war, but a very satisfactory feature is the large amount subscribed by the patients themselves and by means of contributory schemes.

The "mass contribution" has been called in to redress the balance of the old individual donor, and it has risen to the occasion. A slight idea of the community's debt to the hospitals is afforded by the statement of new patients treated during the year in 643 institutions, which supplied statistics. The figures are: England and Wales, 571 hospitals, 403,036 new in-patients, 1,277,338 new out-patients; Scotland, 72 hospitals, 98,090 new in-patients, 1,588,910 new outpatients. These were treated at a total cost to the hospitals of £4,946,299. For England and Wales the ordinary income failed to meet the ordinary expenditure in 1921 by £349,929, whereas the corresponding deficit for 1922 was £28,085, a reduction of £321,844, or 92 per cent. In Scotland in 1921 the deficit was £69,209 and in 1922 was £46,893, a reduction of £22,346, or 32 per cent. Some of the hospitals had an excess of ordinary income over ordinary expenditure and some the reverse. Economy in expenditure with more coordination between the hospitals of a district have had a good deal to do with this better situation. It is, moreover, pointed out in the report that one of the features of the voluntary hospital system that is always not fully appreciated is the legacies towards the endowment of the hospitals that have come to the present generation from its predecessors. The 666 hospitals, with 41,043 available beds, dealt within the present survey have invested funds to the total amount of £17,029,424, yielding an annual interest of £795,509. This represents 16.07 per cent. of the total ordinary income. Referring to the importance of research work, Sir Napier Burnett remarks that hospitals rarely get the credit that is their due for the results attained in the form of new discoveries that help in the prevention and treatment of disease. It is even yet too little recognized by the public "that the great and ever-expanding science of preventive medicine owes its existence in large measure to the work carried out in the hospital laboratories."

One of the great drawbacks of the voluntary hospital system of Great Britain has been that it did not provide for the hospital treatment of those with limited means—of those who constitute what is termed here the lower middle class. The poor, that is to say, all manual workers were able if sick or injured to obtain the best surgical or medical treatment in hospital available

gratis. The workers with their hands in many cases much better off than the so-called middle class, and the rich in Great Britain, have always had at their command the most efficient medical, surgical and nursing care. The rich because they could pay for it and the manual workers because it was given to them. City clerks, typists and that immense class who earn just enough to live, and who must keep up a good appearance, were not allowed the privileges of hospital treatment and could not afford to pay for skilful medical treatment or nursing and have had to be content or put up with frequently inferior medical treatment and nursing care. However, matters in this respect have changed already for the better, most big hospitals in towns have pay wards or wards in which for a moderate sum those not too bountifully endowed with this world's goods will receive first class medical attendance and nursing care. However, facilities for the medical treatment of the "middle class" are not yet many or adequate and are still susceptible of vast improvement. There is in Appendix B of Sir Napier Burnett's report a scheme suggested for the hospital treatment of this class to which reference will be made in a future communication.



CORRESPONDENCE

RADIO IN THE OPERATING ROOM.

To the Editor,

AMERICAN MEDICINE, New York City:

In your June issue, under the title of "The Use of Radio," appears a far-sighted article calling attention to the future possibilities of the radio in medicine.

In this connection I hasten to go on record as having had under experiment the employment of radio in my operating room for the sentimental diversion of patients being operated under "local."

Years ago my colleague and anesthetist, the late Dr. William P. Burdick, utilized a phonograph in order to agreeably distract nervous patients while passing from consciousness thru the first stage into that of

profound anesthesia. We found it serviceable in many cases; we fitted the vocal or musical pieces to the temperament and sentiments of the individual by a wide range of records. A serious draw-back, however, was the "grand stand" effect produced and also that my indispensable surgical assistant abominated music, while others of the staff, either hypo- or hyper-sensitive to harmony and discord, were handicapped in the performance of their duties—no ear-piece adjustments were then found adaptable to a good disc phonograph.

Thru the suggestion of a lady patient made jokingly to me while I was removing her appendix under "local," I was prompted to design a simple operating room radio arrangement. The ventilator can offer a convenient entrance beside the skylight in the roof for the aerial; grounding to an adjacent gas-pipe and either under the head of the operating table or upon a small stand the position of the radio outfit, no one is inconvenienced. The adjustable ear-phones are not in the way, their cord descending from above; when not in use they can instantaneously be removed and automatically drawn up overhead by the same sort of pulley and weight contrivance as holds the hand electric light.

The present obstacle confronting me is that most good broadcasting programs are conducted during afternoons and evenings, while operations under "local," being chiefly elective, are preferably performed in the forenoons—baseball scores and stock reports interest but a limited number of patients. The psychic emotional impression made upon the patient by a radio concert, even if inferior or imperfect, obviously would be considerable, and should more concert programs appear during forenoons I am sure the outfit would be worth while, for the present it is, however, more hypothetical than practicable. I hope to present to your readers at a later date an interesting report.

Signed, EVAN O'NEILL KANE.

The Best Possible.

Heard at the Memphis Dispensary.

Negro buck—in high glee—"Whopper—I'se a fo plus nigger! De ole woman aint got but two!"—J. A. M. A.



(From Our London Correspondent.)

Health of London.

London appears to have grown more and more healthy during the past two years. At any rate, the death rate decreases. The week ending July 25 was the lowest ever recorded in the history of the capital of this country. It was only 7.9 per 1,000 of the population. When it is recalled that the rate during the influenza epidemic of January, 1922, was 31.8 per 1,000, the remarkable character of the present figure will be appreciated. The annual report for 1922 of Sir William Hamer, the County Medical Officer of Health for London has just been issued. In it is pointed out that the wet cool summer resulted in a great diminution of infantile diarrhea, the mortality figure for infants under one year being 6.26 per 1,000 births as against 18.63 in 1921 and 24.28 on the average of the four years 1911-1914. Typhoid fever continued to decline. Premature birth and pneumonia were the two chief causes of mortality. There were 65 cases of smallpox, of which no fewer than 20 were fatal, the mortality thus being 30.8 per cent. The high mortality was due to virulent smallpox being imported from Asia on a ship to a dockyard district among a comparatively unvaccinated population. Reference was made to the outbreak in Poplar, the district in question, in a London Letter to AMERICAN MEDICINE at the time. Measles caused 1,563 deaths in 1922; whooping cough, 1,128; scarlet fever, 301; diphtheria, 1,145. The deaths from pulmonary tuberculosis were 4,888. The death rate from this cause was 1.08 per 1,000. In 1921 it was 1.07. Fewer school children in 1922 were found to require treatment than in any previous year. The percentage was 37.9, compared with over 39 per cent. in 1920 and 1921 and over 42 per cent. in 1919. Between 5 and 6 per cent. of children were undernourished. Under the heading of "Medical Treatment" some illuminating figures are given of the medical work being done for the school children. At the end of 1922 the treatment scheme included thirteen hospitals, fifty-five treatment centers, and a dental center. These sixty-eight centers had accommodation for the treatment annually of 209,158 children, the arrangements including the following ailments: eye, 32,310; ear, nose, and throat, 16,150; ring-worm, 2,628; minor ailments, 52,620; teeth, 105,380. A great factor in the decrease of infantile mortality and sickness in the hot months, and especially of infantile diarrhea, is the remarkable diminution in the number of flies. While the wet summer accounted for some of this decrease of flies, it was undoubtedly mainly

due to the absence of horses from the streets, with the consequent absence of horse dung. During this recent hot weather very few flies have been seen and this has had a good deal to do not only with the decline of infantile mortality but with the improved conditions of health at all ages.

Ministry of Health and Vaccination.

A circular has been issued recently by the Ministry of Health to boards of guardians in England and Wales stating that the Minister has had under consideration the question of the administration of the Vaccination Act, and that he is not satisfied that it is being properly administered in all districts. The truth seems to be that the Act is most laxly administered and in some districts its administration is almost farcical. In any event the parent or guardian of an infant can evade the law by declaring himself a conscientious objector but many will not even trouble themselves to do this, but simply do not have their children or wards vaccinated. The conscientious objector's clause of the Act was inserted to pander to ignorance for political purposes irrespective of its menace to the community. Individual liberty was placed before the welfare of the community. There has been of late on the part of the more enlightened of the population a demand for the repeal of this clause on the ground that by affording a loophole for the evasion of the Act, it is contrary to the interest of the public at large.

Effect on National Health of the Care of the Teeth.

The Annual Conference of the British Dental Association was held a short time ago. In his presidential address, Mr. George G. Campion said that in the past two decades the science of medicine had been passing thru a great change in which it was no longer concerned to be merely palliative or curative, but aimed at becoming definitely preventive. What was the relation of dentistry and the dental profession to this new era of preventive medicine? What the dental profession had long stated of the need for dental treatment as a means of national health and efficiency they knew now on the unimpeachable authority of a sober Government report. The departmental committee appointed to consider the matter reported that at least one-third of the general disease of the mass of the people was due directly or indirectly to dental disease, and since this and its sequelæ were largely preventable, it followed that the treatment of the teeth of the mass of the people must form an integral part of any adequately organized system of preventive medicine. A classical experiment with a school dental clinic at Cambridge afforded proof of the cumulative benefit of treatment over a period of years. In 1908 only 15 per cent. of the children had sound permanent teeth. As the result of treatment the figures in 1920 had been exactly reversed, and the percentage became 51. It would only be if they could transpose these figures into

quantitative terms of the amount of glandular infection, anemia, toxic neurasthenia, gastrointestinal disorders, etc., which had therefore been actually or potentially avoided, that they could be able to picture adequately the value of the work achieved. The story which ten years ago members of the dental profession were telling as voices crying in the wilderness was now being insistently proclaimed from the house tops by the Ministry of Health. To deal with the conditions disclosed, the State and local authorities had created the skeleton of an organization for dental service. In addition, a number of large industrial firms had established dental clinics, and a panel dental service had been formed in many parts of the country.

International Physiological Congress in Edinburgh.

The International Physiological Congress attended by four hundred well-known physiologists from all parts of the world opened in Edinburgh on July 24. Captain Walter E. Elliott, M. P., Under-Secretary for Health for Scotland on behalf of the Government welcomed the members of the Congress "to the Capital of the Kingdom of Scotland." Sir Alfred Ewing, Principal of Edinburgh University, extended a most hearty and sympathetic welcome on behalf of the University. Sir Edward Sharpey Schafer, F. R. S., Professor of Physiology at the University of Edinburgh and President of the Congress in his presidential address said he desired to associate the name of Lister with that gathering, because Lister was for several years Professor of Surgery at Edinburgh, but chiefly on account of the fact that the researches which preceded his great discovery were researches in pure physiology, and were inspired by that great teacher William Sharpey who migrated in 1836 from Edinburgh to London, and to whom he himself and many other British physiologists owed, directly or indirectly, their introduction to their science.

Perhaps the most notable happening at this meeting was a masterly lecture on insulin by Dr. J. J. R. Macleod, F. R. S., Professor of Physiology at the University of Toronto and in whose laboratory Dr. Banting and his colleagues made their investigations and who supervised and perhaps guided, to some extent, the course of these investigations. Professor Macleod's lecture was the fullest and clearest account of insulin yet given. He sketched the history of its discovery and pointed out that insulin sets up some process by which, as it were, a vacuum for sugar became established in the tissue cells, so that sugar was removed from the blood. The various theories which had been advanced to explain this removal were discussed, and Professor Macleod went on to show that insulin or at least substances resembling it in certain essential particulars had been obtained from clams and other shellfish and in the case of yeast from the vegetable kingdom. The lecturer also drew attention to the danger of using too large doses of insulin and by so doing lowering too greatly the concentration of blood sugar with disastrous effects. In the

Lancet, July 28, the lecture by Professor Macleod is published in full. It deserves to be read carefully.

In the section dealing with the physiology of the cardiovascular system, Professor C. J. Wiggers of Cleveland, showed some very delicate instruments which he had used for making optical records of the heart sounds in man and of the pressure changes in the heart of animals.

Dr. J. Crighton Bramwell and Prof. A. V. Hill of Manchester demonstrated a very sensitive recording instrument—the "hot-wire sphygmograph"—which they had used for measuring the velocity of the pulse-wave in man. From these observations they were able to determine the elasticity of the arteries in the living body, and to investigate the variations in arterial elasticity met with in different pathological conditions.

Dr. Jane Sands of Philadelphia showed a series of X-ray photographs illustrating alterations in the size and shape of the dog's heart following artificially introduced aortic regurgitation.

At the concluding session the celebrated Prof. Paxlox read a paper dealing with nervous activity and heredity. He had tried to find out whether the highest nervous activity might be of use to the next generation.

International Congress on Psychology.

The seventh International Congress on Psychology opened at Oxford on July 27. There were delegates from Great Britain and Ireland, the United States, Austria, Belgium, France, Czechoslovakia, Germany, Holland, Hungary, Norway, Poland, Sweden, Rumania, Spain and Switzerland. The Congress was the first since the war. The first International Congress on Psychology was held twenty-one years ago and the last took place in Geneva in 1909.

Dr. C. S. Meyers in welcoming the delegates said that the present Congress differed from the preceding ones in that it had been limited to expert psychologists, and there were only two hundred members. It was the first of the kind since the war, altho French and English scientists had held conferences with restrictions as to nationalities taking part. To call that an International Conference was a misnomer, for they did not meet as Englishmen, or Frenchmen, or Germans, but as psychologists to advance the cause of science, and science knew no nationality. The progress of psychology since the Geneva Conference in 1909, he believed had been more living, less academic, and less abstract. There were three important applied sciences, educational psychology, industrial psychology and all these would be discussed. The discussions at the Congress will be dealt with in a future letter.

Another very important conference has just been held—that of the Royal Sanitary Institute at Hull. Among the subjects discussed was birth control. Dr. J. R. Kaye said that largely owing to the child welfare work of the past

twenty years, the child of today could be reasonably expected to live twelve years longer than its grandfather. He referred to the necessity for pre-nuptial forethought and selection and said that bad mating should be shunned. It was easier to spend money on birth, he added, than to incur wasteless and needless expenditure on death. Expenditure on national health was far more profitable than tombstones, tidy church yards, or ostentatious funeral display. He advocated definite legislation against the reproduction of mental defectives. He described birth control as a second edition of the survival of the fittest and instead pleaded for judicious mating, determined by health rather than by bank balance.

Dr. S. G. Wynne, of Sheffield, said that he was convinced it was time that the sentimental propaganda in favor of unlimited production of babies, and their preservation, whether fit or unfit to survive, should be sternly discouraged by all who took public health work seriously.

In Favor of the Moderate Use of Alcohol.

Lord Dawson of Penn, one of the leading physicians of this country, who had the courage a short time ago to champion the practice of birth control in certain circumstances, has again somewhat startled the community by his outspoken way of expressing his views. This time it was in the House of Lords, and the occasion was the debate on Lady Astor's Bill, the measure of which the object is, to prevent publicans from knowingly serving liquor to persons under eighteen years of age. Lord Astor had introduced the Bill to the Lords. Lord Dawson said that he, Lord Astor, gave the impression that he desired to make out a case for the elimination of alcohol. He, the speaker, should have been more happy if he had heard from Lord Astor's lips one word of approval of alcohol in any shape or form. One could not shut one's eyes to the fact that quite a large proportion of the people who supported this Bill were people who looked upon alcohol as a harmful thing in itself, and especially harmful to youthful persons. Under the conditions of modern civilization, he went on to say and in these days of concentration, the constant endeavor to put twelve hours into six, and the high measure of specialization, it was obvious that at the end of the day the mind of man got into one track. He had no uplift. There alcohol came in very well. Alcohol in moderation got that man out of the track. It lightened his mental touch. Again at the end of the day, a number of people were quite unable to digest their food because they were too tired. A small quantity of alcohol made them feel happy with themselves and at peace with the world. But, and here came his qualification for the purposes of the Bill, there was a great distinction between youth and age. Youth felt the effect much more quickly. It did not get into one track. It did not require alcohol, and was apt to acquire habits which were damaging for youthful nerves. The effect on adults came late. The effect on youth came early.



The Insulin Treatment of Diabetes.—Banting and McPhedran give the following as their routine method in using insulin (report in *Jour. A. M. A.*, June 9, 1923, page 1726):

"When we admit cases of diabetes to the Toronto General Hospital, the patients are allowed to remain for twenty-four hours on the diet they have been taking previous to admission. They are then placed on a diet requisite to satisfy their basal requirements. The next step is the taking of a careful history: complete and careful examinations are made as to the existence of foci of infection; examinations of the blood and urine are made, and the excretion of sugar is noted. The amount of sugar excreted is subtracted from the amount given to fulfil the basal requirement, and furnishes the basis for estimating the amount utilized. If the patient becomes sugar free when receiving a diet calculated according to his basal requirement, he is not at present considered a sufficiently severe case for insulin treatment. The insulin treatment consists in giving an amount sufficient to maintain a balance between the calories that cannot be metabolized by the patient's own pancreatic secretion, over and above the carbohydrates, fats and proteins that he is able to utilize. In the milder cases, insulin is administered once a day; in the more advanced cases it is given twice a day, and in the very severe cases it may be necessary three or four times a day.

"The best time for the administration of insulin is from twenty to thirty minutes before meals. The insulin injected subcutaneously is absorbed by the circulation, and this tends to produce a balance between the hypoglycemia of insulin and the hyperglycemia brought about by the food intake. The patient with a very high blood sugar may stand a comparatively higher dose, because the blood sugar must be brought down to normal. Roughly speaking, one unit of insulin has the effect of utilizing 2.5 gm. of carbohydrate in the milder types of cases. In the more severe cases of diabetes one unit of insulin will take care of about 1 gm. of carbohydrate. Care must be given in studying the best time for the administration of the dose. It is sometimes necessary to give a larger dose in the morning than in the evening, because after the morning injection there is a tendency to hypoglycemia, and breakfast counteracts the downward tendency. The action of the drug lasts till noon, when another meal is taken. Some patients do better when taking 15 units in the morning and 10 units in the evening.

"In the management of the case it is better to decrease the diet and increase the dosage,

until the amount of food required by the patient is reached. The diet is then kept constant, and sufficient insulin is administered to keep the patient sugar free if possible. The art of treatment consists in balancing the amount of internal secretion with the amount of carbohydrate that is over and above the patient's tolerance, keeping the equilibrium between the hypoglycemia, on the one hand, and hyperglycemia, on the other. If the patient is excreting 1 or 2 gm. of glucose with a diet that is 700 calories above the requirement, one must find out the time of day at which that amount is being excreted, and administer the dosage accordingly. Insulin shock is a definite clinical entity. It is always recognizable, as the subjective sensations are pathognomonic of the lowering of blood sugar. The reactions depend on the fall of the blood sugar and the extent and rapidity of the fall. The normality of the blood sugar must be kept above the level at which the reactions occur. It has been found experimentally that the administration of calcium relieves the hypoglycemia convulsions that occur in rabbits, altho without raising the blood sugar. This fact has been made use of clinically at the Children's Hospital. The patients are less likely to hypoglycemic reactions when receiving 3 gm. of calcium lactate, three times a day.

"One type of diabetes that does not respond well to insulin treatment is that with diarrhea, but one patient with a severe case accompanied by diarrhea is now having fewer reactions under calcium chloride administration than previously. Insulin dosage means that the patient is permitted to metabolize more calories. The increase of caloric intake and maintenance of normal blood sugar relieve the symptoms of the disease.

"In regard to the continuous use of insulin indefinitely, it does seem that by adding the necessary amount of pancreatic secretion the patient's own gland is relieved of the strain and has some chance to recover. Patients showing 50 gm. excretion can after three months' treatment take 300 additional calories and remain sugar free. The other patients who were acetone free despite starvation will get an increased tolerance after a time. The formation of acetone is prevented in patients who showed acetone from starvation, because they are now able to handle sufficient calories.

"Insulin is not a cure for diabetes, it is a treatment. It allows the patient to combat infections, to keep free of acidosis and to avoid coma. It enables the diabetic patient to burn sufficient carbohydrate, so that protein and fats can be added to the diet in sufficient quantities to give him energy to carry on his work and maintain the ordinary economic burden of life."

Treatment of Fissural Lesions with Bac. Lactis.—In the treatment of the different varieties of fissural lesions (anus, breast, vaginismus, chronic vulvitis), Dr. Pouliot (*Med. Press and*

Circular, December 20, 1922) recommends the use of bac. *lactis*. He makes use of a ready-made paste which may be obtained in collapsible tubes, or prepares the paste extemporaneously by dissolving a dry culture in saline solution or mixing a liquid culture with lactose. The lesion to be treated must not be cleansed with antiseptic solutions, only neutral fluids are to be employed—for example, boiled water, decoction of linseed or marshmallow, saline solution, or blood serum. If, however, the lesion is a deep one, it may first be cauterized with nitrate of silver, chloride of zinc or tincture of iodine. The lactic paste is applied by means of a spatula or a tampon of cotton wool. In case of vulvar lesions it is well to apply, in addition, either zinc oxide, talcum or bismuth with kaolin. In breast lesions, a protective dressing with sterilized gauze.

Climate as a Factor in the Treatment of Tuberculosis.—There is no specific climate for the treatment of pulmonary tuberculosis. Schwatt (*New York Med. Jour. and Med. Record*, January 3, 1923) says that no one climate is suitable for all cases of the disease and that it is becoming more and more the consensus of trustworthy opinion that tuberculosis can be successfully treated anywhere under a proper régime of rest, fresh air, diet and time.

There is no conclusive evidence to lead us to believe that high altitude is of any specific influence in the disease.

On the contrary, the great majority of the tuberculous and particularly those in the advanced stage are harmfully influenced by altitudes above from one thousand to two thousand feet.

Indigent consumptives, especially those in the advanced stages of the disease, should not be sent to high and distant climates.

It is important that these facts become of more common knowledge among physicians and the laity.

Essentials to Success in the Use of Local Anesthesia.—With the growing importance of local anesthesia, the conclusions of Blesh (*American Physician*, January, 1923) are of special interest. According to the author among the essentials to be secured are:

1. Entire confidence of the patient in the surgeon and the surgeon in himself.
2. Mastery of anatomic detail, especially as to nerve distribution.
3. The use of a practically non-toxic drug in a weak solution in massive quantities by the combination of regional with infiltration anesthesia.
4. Combine with adrenalin to prolong the anesthesia in all but toxic goiter cases. It is very annoying and dangerous to develop the Goetsch test during a critical operation.
5. Handle the tissues sacredly, caressingly, as tho in them is hidden the very citadel of life—which is literally true, thus making every assault upon it an actual assault upon life

itself. Religiously avoid traction. Do not indulge in so-called dull or dry dissections. The sharp scalpel insults far less than tearing or wiping with gauze.



A School for Child Cultivation.—A "school for child cultivation"—*Ecole de Puericulture*—is the name given to an educational undertaking in France which combines in one organic program of training for child care a whole range of courses in medicine and public health, infant care and school hygiene, community organization and social welfare work, which in the United States are for the most part allocated to separate fields and agencies. Its aim, according to the announcement of the curriculum just received in this country, is in line with the nation-wide movement in France for counteracting "depopulation" and infant mortality by conservation of child life and training and guidance of mothers.

The school was founded thru the instrumentality and with the aid of the American Red Cross and is maintained by the Franco-American Foundation. It is under the government of the Faculty of Medicine of the University of Paris. Among the Americans included on its committee of patrons, which is headed by the President of France, are Ambassador Herrick, Robert Olds, American Red Cross Commissioner in Europe, and Dr. William Palmer Lucas, former chief of the Department of Child Welfare of the American Red Cross, and one of the directors of the American Child Health Association, a national organization devoted to the improvement of methods and standards of health care for children in this country and abroad, under the presidency of Herbert Hoover. Dr. Selskar Gunn, of the Rockefeller Foundation, is a vice-president of its administrative council.

Its purpose is to provide courses in study and field training in child health care for doctors, midwives and *visitueuses d'hygiene*, whose work with mothers and babies corresponds to that of visiting nurses in this country. The course was first established to meet the need of trained personnel in this latter work, as a result of conditions which arose during the war. It has succeeded in setting up standard qualifications in prenatal and feeding care, and work for new-born infants, for professional workers in this field, according to Dr. Walter H. Brown, director of the Mansfield, Ohio, child health demonstration, a five-year experiment, financed by the American Red Cross and directed by the American Child Health Association, which has been undertaken in this country to demonstrate what a typical American

community can do to secure better health development for its children. Dr. Brown inspected the work of the French school on a recent visit to Europe.

The school is authorized to confer two grades of university diplomas of the Paris Faculty of Medicine upon its matriculants, one for doctors and students of medicine, including both French and foreign students, and the other for midwives and nurses, who must likewise pass the regular examination for this award.

Tuberculosis and Cancer Show Marked Decline.—The general health record during the first half of 1923 was more than satisfactory, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, said recently in an exclusive Science Service statement. Following a most unpromising beginning, chargeable wholly to the influenza outbreak of the early months of the year, a consistent improvement has since been in evidence. At the end of the half year the death rate of the millions of white policy-holders of the Metropolitan Life Insurance Company was only one-third of one per cent. in excess of that for the corresponding period of 1922. For the colored policy-holders the increase was 4.2 per cent. These small differences are very encouraging, coming as they have in the face of high influenza-pneumonia mortality during the first three months. The excellent health record of the second quarter has almost wiped out much larger adverse margins than were in evidence three months ago.

"The best feature of the health record of 1923 to date is the continued improvement in the tuberculosis death rate," Dr. Dublin said. "Almost beyond peradventure a new minimum will be recorded this year in the mortality from tuberculous disease. The continuous decline (except for a single year) that has been observed since 1911 is still going on."

"Another encouraging item of the 1923 health record to date is a decline in the mortality from cancer. This has been considerable among the white policy-holders and there has been a slight drop among the colored."

The mortality from diseases incidental to pregnancy and childbirth has shown pronounced improvement, and if the present favorable record is maintained thruout the year the death rate for these diseases will be lower than for any year since 1917.

Two of the four principal communicable diseases of children, diphtheria and scarlet fever, registered lower death rates than for the first half of last year, Dr. Dublin's figures show. The drop in the diphtheria rate was considerable and unless there are very unfavorable developments later in the year the 1923 mortality from this disease will be the lowest ever recorded among Metropolitan Industrial policy-holders. Measles and whooping-cough, particularly the former, are causing many more deaths than during the first half of 1922. The measles rate has more than doubled among white policy-holders and among the colored it was almost six times as high as for

the first half of last year. An unusual item in this year's record is the very high measles death rate among colored policy-holders. Ordinarily, mortality from this disease among colored children is less than that for white children; but this year the difference is very small.

Two hundred and forty-one deaths were caused by alcoholism during the first six months of 1923, corresponding to a death rate of 3.3 per 100,000. This may be compared with 133 deaths during the first half of 1922 with a death rate of 2.0. Since the first of January, 1922, 534 deaths from this disease have been recorded among American and Canadian Industrial policyholders. Of these 531 were distributed among 34 American states, while 3 occurred in the Canadian Province of Ontario. In addition 20 deaths were recorded from wood and denatured alcohol poisoning.

The record of the half-year for accidental deaths compared unfavorably with the figures for the corresponding periods of 1922 and 1921. Substantial increases are in evidence for both white and colored persons. Automobile fatalities have increased materially.

Nutrient Value of Rice One Hundred Years Old.—Jansen, quoted in the *Journal A. M. A.* (August 11, 1923), calls attention to the fact that the surplus rice harvested in a part of Java which has been comparatively inaccessible has been stored in the ear in local warehouses for many years. The stores thus accumulated in 100 years amount to 100,000,000 kg. of rice. A road has now been built into the region, and Jansen's research has demonstrated that there has been very little, if any, loss in vitamin and ferment content of the rice or in digestibility.

The Slaughter of Innocent Tonsils.—Undoubtedly too many tonsils are being sacrificed which result in failures as to ends-attained; which results in discredit to the judgment of the doctor. More care and study, as the *Medical Herald* (August, 1923) well states, should be given the case; not so much how the tonsils look, as to how they "act." Is there focal infection, inflammation, repeated attacks of silitis, or a conservative need? Are you following your cases to end-results and getting a "profitable" result of cure?

When Are Syphilis and Gonorrhea Cured?—Both syphilis and gonorrhea are curable, as a writer in the *Urologic and Cutaneous Review* (August, 1923) properly states, but he is a wise man who knows when either of them is cured. In syphilis there are no infallible criteria of cure. In gonorrhea negative smears in repeated succession are indicative of probable cure; a negative smear after milking the prostate and a negative smear after a provocation injection of a ten per cent. silver nitrate solution are strongly corroborative of cure.



Don'ts.—Do not run your car on the starter. Do not drive on long trips with "spark" retarded. It helps to overheat the engine.

Do not race your engine in cool weather, or on starting in the morning.

Do not blow your horn too often. Save your battery.

Battery Hints.—Do not forget to look at your battery at least weekly in summer and every two weeks in winter. It just has to have a drink. Battery service stations, handling your respective battery, do this service free of charge under your 90-days clause on new cars.

Test your battery frequently. Doctors make so many short trips, the use of the starter wears on the battery.

Use your choke on starting.

The use of your starter uses the equivalent in "juice" of 25 miles in driving.

Use "distilled water" only in filling your battery. Only fill it until the solution touches the bottom of the filling tube, no higher. This is important.

Keep your battery clean, especially the terminals. The use of a brush and vaseline around the terminals is suggested, as it prevents corrosion.

In testing the battery, your hydrometer gives the proper scale.

The adding of acid should be left to the battery service man.

If your car stands idle for a month or more, disconnect your battery. If standing 60 days during bad winter weather give battery a freshening charge before putting it back into service.

On long touring trips, where your generator is charging well and your ammeter shows 8 or 10 points charging, burn your lights and save your battery overcharging.

Hints.—If your engine overheats on long trips during summer the following conditions may be responsible:

1. Leaking radiator.
2. Loose fan belt.
3. Leaks in oil connections.
4. Loose or defective hose connections.
5. Driving a retarded spark.
6. Oil strainer clogged and no distribution of oil.
7. Water pump not functioning.

A large portion of roadside troubles are due to defective ignition, broken wires, loose connections, broken spark plugs. Due to vibration and present condition of roads the above con-

ditions are likely to arise at any time or place.

The distributor is a very important part of the ignition system. This particular unit determines the proper sequence and time at which the spark occurs in the cylinder. The distributor head should be wiped clean with a soft rag now and then to remove all dust and a small amount of vaseline applied to the rotor track. At the same time the contact points should be cleaned with the rubber end of a pencil, finally applying very small amount of vaseline to each point, thereby obviating any chance of points being cut.

Many a car is ruined thru lack of water in the radiator, consequently overheating the engine and cracking a cylinder.

In new cars oil should be drained from the crankcase every 500 miles. This is important. The best oil is, in the end, economy.

Care of Tires.—Do not overload your tires with air in hot weather.

Do not rely upon gauges attached to air hose at garages. They are not always efficient. Reliable pocket gauges are on the market and may be obtained for a nominal sum. Many tire firms and garage men advocate using 20 lbs. to the inch in width of your tire. This is not always true, as in a 32x4 tire 80 lbs. of air would and does make hard riding. Fifteen pounds makes easier riding.

See that your tires carry the proper amount of air.

Don't forget that spare tire. Keep the same amount of air in your spare tire as the ones in use on our car and keep it covered from the elements.

Sun and rain on a tire not in active use tend to depreciation and cracking of the best rubber.

Take good care of your rubber. Gas, oil, and kerosene are natural enemies of rubber.

Method of Removing Carbon.—First, after a fairly good run and when the cylinders are still hot, pour in each petcock about one ounce of kerosene oil. Close up the petcock and give time for the oil to soak in the carbon about 15 to 20 minutes.

Second, start the motor and allow to run for about five minutes. In the meantime fill the containing can of an ordinary plant-spraying syringe with a strong peroxide of hydrogen solution. Then spray this solution into the opening of the air intake valve of the carburetor, about a teaspoonful or more every 30 seconds until the whole amount in the receptacle is consumed.

Third, if the engine becomes choked reduce the amount forced into the carburetor and lengthen the intervals.

Fourth, the carbon should pass out of the exhaust pipe and form a dense black and cloudy smoke.

Fifth, only strong peroxide of hydrogen should be used. The cheaper solutions will not do.

**NEWS NOTES &
ANNOUNCEMENTS**

Fiftieth Anniversary of the Bellevue Training School.—A recent celebration of the fiftieth anniversary of the founding of the Bellevue Training School for Nurses was conducted in Carnegie Hall, New York City, May 8. This was the first school established in this country on the Nightingale plan. The auditorium was completely filled with nurses, in the center of the groups were Bellevue graduates, many of them who had contributed many years of honorable service to the nursing profession. Representatives from fifty of New York's registered schools were present, in addition to visiting nurses, also members of the Army or Navy service. Students in cap and gown from Teachers' College, represented post-graduate students preparing for special service, and above the groups, blue and gold banners bearing the names of the schools and other participating organizations.

Speakers included Surgeon-General Ireland, Miss Annie W. Goodrich, Miss Lucy Minigerode, Bellevue Training School, Class of 1898.

American Public Health Association's Secretary.—Mr. Homer N. Calver has been elected executive secretary of the American Public Health Association to fill the vacancy caused by the resignation of Mr. A. W. Hedrich. Mr. Calver has had experience in health work in South Carolina, New York City and in France during the World War. He is a graduate in sanitary engineering from the Massachusetts Institute of Technology.

Appointments to the Position of Junior Medical Officer.—Applications will be received until December 28. The examination is to fill vacancies in the Indian Service, at entrance salaries ranging from \$1,000 to \$1,200 a year, plus the increase of \$20 a month granted by Congress, and quarters, heat and light; in the Coast and Geodetic Survey, at an entrance salary of \$1,020 a year, plus the increase of \$20 a month, and an allowance of \$1 a day for subsistence while serving on board ship, except in the Philippines, where the allowance is \$2.50 a day; and, in the Panama Canal Service, at an entrance salary of \$250 a month.

Applicants must have been graduated from a medical school of recognized standing; or be senior students in such institution and furnish proof of graduation within six months from the date of making oath to the application.

Competitors will not be required to report for examination, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the post office or custom house in any city.

The American Academy of Applied Dental Science.—The fifth annual meeting of the American Academy of Applied Dental Science will be held in Cincinnati, Ohio, January 7, 8, and 9, 1924.

All ethical students of progress in both the dental and medical professions are invited to attend these sessions.

National authorities will present at this meeting the last word on life extension thru oratology (health dentistry).

For information write Dr. E. F. Forestner, Cincinnati, Ohio, 104 Bell Block.

Dr. Banting Listed for Annuity for Discovery of Insulin.—Dr. F. G. Banting, of Toronto, discoverer of the insulin treatment for diabetes, was listed for an annuity of \$7,500 in supplementary estimates announced in the House of Commons by the Minister of Finance. Premier Mackenzie King has announced that he intends to move in the House for recognition by Parliament of the work of Dr. Banting, to permit the scientist to devote his life to medical research. The Canadian Medical Association at Montreal passed a resolution of thanks to Dr. T. C. Banting for the discovery of insulin. The Ontario Government has also done so.

Child Suicides and Child Marriages.—According to Dr. Henry M. Warren, quoted in the *Literary Digest* (May 19, 1923), in 1919 there were reported 477 child suicides. In 1920 there were 707. In 1921 the number had increased to 858. In 1922 there were over 900, or nearly 3,000 in four years. The average age of boy suicides is sixteen, girls fifteen. Most girls use poison; the boys use a gun. In 1920 there were 1,600 boys and 12,000 girls fifteen years of age in the United States listed as married, and nearly 500 of them were recorded as widowed or divorced. The married boys of sixteen numbered 3,222. Those of seventeen numbered 7,690, those of eighteen 24,644. Girls who had married at sixteen numbered 41,620, at seventeen 90,930, and those at eighteen 186,645. Mental instability consequent on puberty or adolescence plays a big part in both the marriages and suicides. There are epidemic factors in both.

American Medicine

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Help Japan.—The earth's crust has contracted. Tuscarora deep cracked. The earth trembled and its work was done. A magnificent nation became subject to the greater destruction from the weaknesses of man's own building.

As in San Francisco's earthquake, the major damage in Japan was the result of the failure of the gas and water supply to withstand the action of the elements. Fire burst forth and carried desolation, death, and ruin in its lurid path. The magnitude of the catastrophe first overwhelmed and then stimulated the peculiar feelings of brotherhood, which is temporarily obtunded during strife, but ever recurs in the face of peril, disease, or death during times of peace. With a remarkable and meritorious promptitude, the American nation has responded to the unvoiced call for assistance. From the President of the United States to the lowliest citizen there has been an effort to participate in salvaging those very people whom jingoists are wont to term the "Yellow Peril."

The American Red Cross is foremost in the activity to secure a special relief fund of at least five million dollars for relief in all the forms that are required.

The next month or two will be of considerable moment to the Japanese people, not merely because of the destruction of homes and the temporary paralysis of business, but by reason of the lack of food, water, and the shadowy specter of disease. Fortunately, the Japanese are vigorous, re-

sourceful, and competent, with a high degree of modernity in their scientific attainments. They are fully competent to organize and supervise all methods of rehabilitation that their country requires, tho they may need considerable assistance in providing for the temporary situation. They are a people accustomed to earthquakes and have been obliged to meet similar, tho less, devastating disasters arising from the same form of geologic activity. It is the large scale on which the present desolation has occurred and its destruction of the largest city and greatest seaport that has brought about the serious consequences to a large population.

The medical profession of Japan is responding with its wonted enthusiasm to the demands upon its intelligence, time, and service, in order that lives may be saved, handicaps minimized, and epidemics avoided. The medico-social relief is the vital problem, regardless of the need for the reconstruction of transportation facilities, the re-building of houses, and the re-establishment of economic functioning. The physicians, sanitarians, bacteriologists, nurses, and hospital groups have the tremendous responsibility of caring for immense population of men, women and children. To give them the means of most effective service is a task for which every effort is required. It is the tribute of man's humanity to man that is called forth in a crisis from which Japan will emerge conscious of the practical sympathy, assistance and cooperation

that constitute the richest elements of international amity.

The Prevention of Goiter.—The development of practical experience in the prevention of goiter has increased the rational basis for securing the interest of public health administrators in effective prophylactic measures that may be readily applied without great cost. In *Public Health*, issued by the Michigan Department of Health, August, 1923, Reed and Clay give the results of a survey of the school children of Grand Rapids, among whom 30 per cent. were found to have an enlargement of the thyroid gland. 32 per cent. were boys, while 67 per cent. were girls, showing that the prevalence of thyroid enlargement among boys is much greater than has been generally accepted. The thyroid enlargements increased gradually from the age of five years to fifteen years and consequently is most frequent at the adolescent period.

In view of its findings, the Department of Health of Grand Rapids regards goiter prevention as a necessary public health measure, to be attacked thru the existent organization of school physicians and nurses. The plan proposed has received the approval and consent of the Kent County Medical Society and as a result the school children of Grand Rapids are at present receiving tablets containing iodine, so that they will receive ten milligrams of iodine weekly thruout the school year. The administration of medication is not mandatory, but is urged upon parents, whose written consent is required before this service is undertaken.

Thus Grand Rapids joins the number of progressive cities in recognized goiter belts that are undertaking the reduction of pre-

ventable goiter, whose incidence is due to an insufficiency of iodine in the soil and water of the community.

The fact that 75 per cent. of simple goiter occurs among school children indicates the rationality of undertaking the correction of goiter during the period when childhood is more readily reached and controlled and when the educational value of the measure as related to health can be adequately presented to children and their parents.

The experiences of Marine and Kimball in 1916 in reducing goitrous children in Akron, Ohio, serve as the foundation of the work which has been done in the United States. And today thruout the world there is a general attack for the purpose of eliminating goiter. McClendon has divided the United States into four goiter zones, on the basis of the statistics of the prevalence of goiter among drafted men during the World War. This tabulation has been strengthened by a determination of the iodine content of the drinking water in these various zones, which clearly indicates an inverse ratio between the iodine content of the available water supply and the appearance of goiter. Hence, in those areas of the United States where thyroid enlargement is endemic, the essential program is to increase the iodine content of the food or water supply of the population, in order to lessen the incidence of goiter in the future, as well as to relieve many children of their present symptoms.

In a country such as Switzerland, where goiter has ever been endemic, the effect of prophylactic administration of iodine has been encouraging by the astonishing results. Among the school children of the Canton of St. Gallen there are 87.6 per cent. who had goiter in 1919, while only 13.1 were found

thus affected in 1922. Because of these remarkable achievements, the Goiter Commission of Switzerland in 1923 recommended the use of iodine as a preventive measure thruout the entire state as a public health measure. According to Swiss practice, children are supplied with the equivalent of 1/150 of a grain of iodine per day, administered as an organic iodide in a chocolate tablet.

The original practice of Marine and Kimball provided for the administration of 30 grains of sodium iodide administered in three grain doses, daily for ten consecutive days, during each spring and autumn.

Sloan has suggested the general utilization of iodized table salt in the home. For effective purposes, one part of sodium iodide in five thousand parts of sodium chloride is to be utilized for all the purposes for which the simple salt has ordinarily been employed in the home. This procedure might well be advised for the treatment of children who have left school at an early age or before their goiter has been reduced.

The city of Rochester has undertaken a universal plan for ridding itself of endemic goiter. For a period of two weeks during the spring and autumn sufficient sodium iodide is added to the daily water supply to constitute an iodine content of 1/75 of a grain per gallon. On the theory that each individual consumes daily, in food or beverage, two quarts of water, there would be an individual ingestion of 1/150 of a grain of iodine, which Swiss experience has demonstrated to be effective. This is an expensive plan and is less effective in that there can be no definite assurance that the children requiring the medication will secure it thru drinking the necessary amount of water. It is undoubtedly effective in its general results upon the entire population, particularly the adult industrial group. Its

need for children under five is doubtful and as a whole the plan provides for an immense wastage of sodium iodide in the treatment of the entire water supply.

Of all the plans suggested, therefore, the public health administration of iodine in desired form to school children appears the simplest, most effective, and most economical. It attacks the problem at an age when the sound functional activity of the thyroid gland is most necessary for physical and mental development. It not merely aids naturally in preventing goiter, but undoubtedly is an important means of improving the physical, mental, and moral health of children. While this procedure may be advised by individual physicians in private practice, the goiter prevention cannot be of public service unless the prophylactic means are employed upon a large scale. This becomes possible only thru the cooperation of the public health and educational departments and the direct attack upon the problem thru administering the necessary iodine to public school children.

In the history of preventive medicine there is no more satisfactory demonstration of scientific methods applied to human needs.

The conquest of endemic goiter now appears to be possible during this generation. To obtain this ultimate desirable goal the active support of county and state medical societies is requisite. The recognition of the value of municipal and state aid in a problem of this magnitude provides adequate reason for a stimulation of public interest in the simple methods now available after a conclusive experience and large scale demonstration. The sanction and approval of organized medical societies will be of supportive value to those who are able and willing to undertake the public service if the necessary appropriations are made

available. The Kent County Medical Society has performed a public service in co-operating with the health department in a manner that deserves the flattery of imitation by all the county societies in goiter zones.

Medical Education.—The status of medical education in the United States seems to be greatly improved thru the active concern of the American Medical Association in eliminating stock corporation colleges and raising the qualifications for matriculation. In the *Journal of the American Medical Association*, August 18, 1923, appears the annual résumé of statistics concerning medical education in the United States. It is difficult to realize that in 1906 there were 160 medical schools in the United States, as compared with only 154 in the rest of the world. Wherefore, it is a source of congratulation that the number has been reduced 50 per cent., so that today there are only 80 existing in the United States, of which 74 are non-sectarian in their practice. The medical institutions have now been reduced to a number more consistent with the needs of this country, and as a result each one has gained in strength, in number of students, and in effective organization.

In 1901 the enrollments in all medical schools was 26,417, of whom 5,444 graduated. In 1923 the complete attendance in medical schools was only 17,432 and there were but 3,120 graduates. This represents a marked shrinkage in the medical school population and in the number finally attaining the opportunity to call themselves physicians. This, however, does not represent a lack of highly trained physicians, as was the result of the previous chaotic plan of

medical school organization and instruction. Today, practically more than 90 per cent. of the medical graduates come from high-grade, well-equipped medical colleges; and the student body, as a whole, instead of having 15 per cent. of the embryo doctors of collegiate training, as was the case in 1910, had in 1923 50 per cent. of the medical graduates with liberal arts degrees. It is patent, therefore, that the type of medical student has greatly advanced during the past twenty years and therefore the possibility of more effective education exists. Not merely the breadth of the curriculum has been widened, but greater depths have been plumbed by the students with richer backgrounds, training in methods of study and application, and mentally endowed to undertake the serious study of medicine.

In 1914 one year of college work, including courses in physiology, chemistry, and biology, became a requirement for admission to medical schools rated as Class A. In 1916 the entrance requirement in Class A was raised, so as to demand two years of collegiate work as pre-requisite for matriculation. While this became effective in 1918, the fears that it might exclude desirable students were not realized, indeed almost a third of the state boards had already adopted this status and this was practical evidence that the standard for medical matriculation had not advanced beyond social needs. It is evident that more than one-half of the medical students today have had the benefit of not only two years of college instruction, but have successfully achieved their liberal arts degree.

The results of this shrinkage in the number of colleges, combined with the reduction of the number of students, together with the increased educational resources of the student body have naturally carried

with them tremendous improvements in the educational systems, as applied to the fostering of the medical profession, so as to yield the highest type of physician for public service. Today the medical colleges of the United States as a whole are not surpassed by any, regardless of years of tradition and foundation, dating back to the middle ages. An unsurpassable general medical education can be secured in this country. The type of student at present engaged in preparation for medical practice shows the tendencies for increasing advancement, particularly in view of the remarkable developments of the past twenty years. The making of medicine lies in the hands of this new group, many of whom are about to enter upon their medical education this year.

As the energy and knowledge of youth are in so many walks of professional, industrial and commercial life, there is evidence of the gains that may accrue to medicine by affording larger opportunities to this new generation of physicians. They start into active professional life with a training and experience that probably represents a larger degree of practical knowledge than the physicians of a generation ago acquired within ten years of practical experience in the care of the sick. The standardization of medical colleges and increased educational requirements have been of immense public service. There is a degree of satisfying comfort in appreciating that professional status is on a higher plane, owing to the interest and efforts of the American Medical Association.

space, minimizing time, and adding to the pleasure of nations. As is pointed out in the *Weekly Bulletin* of the Chicago Department of Health, September 1, 1923, the automobile possesses a negative side, which is not to be ignored. Its responsibility for increasing numbers of fatalities and accidents reveals its possibilities as an agent of destruction, when improperly controlled. In addition it possesses a definite hazard, by reason of its poisonous products, representing the gases of incomplete combustion, which threaten life and health.

It is well known that carbon monoxide, colorless, tasteless, and practically odorless, is a most dangerous gas that is found in the exhaust from automobiles to the extent of 4 to 8 per cent. Unfortunately, complete combustion is not obtainable in automobiles utilizing gasoline, the most effective and serviceable fuel thus far devised. With the adulteration of gas by benzine, or other chemical substance, so as to allow a high degree of compression in the cylinders without a premature explosion, the toxicity of the exhaust gas is increased, so that it becomes an industrial hazard to automobile mechanics, and even to pedestrians on the streets, where automobile traffic is congested.

There is evidence to indicate that the carbon monoxide content of the air in streets where automobile traffic is dense may be as high as two parts per ten thousand and may affect the air from five to twenty-five feet above the ground. The presence of the gas has undoubtedly been reported in large quantities in garages and automobile workshops, particularly where ventilation is inadequate. "During the six-year period, 1917-1922, inclusive, there were 2,347 deaths in Chicago due to gas asphyxiation, 1,426 of which were accidental."

The Automobile Hazard.—The automobile has become an essential factor in the development of economic life in reducing

The implication is that a large measure of these deaths were due to carbon monoxide poisoning—a considerable percentage probably occurring as the result of automobile exhausts.

Acute carbon monoxide poisoning is evidenced by an indefinite feeling of illness, accompanied by the throbbing of the blood vessels, a burning sensation of the face, soon followed by severe headache, dizziness, and nausea. With the inhalation of large amounts of the gas, drowsiness and unconsciousness may result, which, without remedial attention, may proceed to the lethal point. The chronic poisoning, due to daily exposure to small quantities in the atmosphere, induces dizziness, nausea, and occasionally vomiting. There is a general fatigue or malaise, and at times a lack of mental concentration. Most marked, undoubtedly, is the irritation of the mucous membranes, the dryness of the throat, and a persistent hacking cough.

The Chicago Health Department, thru a questionnaire, elicited the information from automobile manufacturers that when ventilation is bad, the number of absentees increases and may run as high as 33 per cent. of the employees off duty, with the general complaints of headaches, bronchial distress and fatigue. Policemen stationed at crossings where automobile traffic was heaviest almost without exception complained of fatigue, dryness in the throat, headache, and bronchial affectations, which symptoms they significantly commented, disappeared when they were on furlough or assigned to duty in other sections of the city. The condition is most annoying on hot, humid days, when an active wind is absent.

The facts appear to be convincing and call for more general attention to the need for

the proper ventilation of private and public garages, automobile repair shops, or any other place, completely or partially closed, wherein automobile exhaust gases may accumulate. It is equally important to safeguard the lives of public officials and pedestrians subject to these deadly fumes by some practical measure.

Henderson and Haggard, in the *Journal of the American Medical Association*, August 4, 1923, detailed the results of experiments designed to lessen this particular type of fume hazard insofar as it is related to the automobile. The corrective principle is simple, economic, practical, and effective. It involves shifting the outlet of the exhaust from its horizontal plane, so that it becomes a chimney with a vertical exhaust pipe, running upward at the back of the car. Herman M. Bundesen, the Health Commissioner of the City of Chicago, believes that the vertical exhaust should be made obligatory and is contemplating an ordinance to that effect. He regards this simple mechanical chimney-like adjustment as a likely method of reducing carbon monoxide poisoning to a minimum. Further, he believes that the vertical exhaust would almost completely prevent the invasion of carbon monoxide into the respirable air zone on the streets and in homes and offices. It is patent that the plan suggested does not do away with the need of adequate ventilation in garages, but natural ventilation is facilitated by the ejection of the exhaust high up in garages rather than near the floor level, as at present exists.

Incidentally, it may be remarked that the vertical exhaust reduces the fire hazard, as gas spilled on the floor cannot then be readily ignited, as is the fact with a low borne horizontal exhaust.

Whether or not the mechanical re-ar-

rangement of the exhaust pipe will suffice to eliminate carbon monoxide poisoning, it certainly will tend to reduce it. Man's own inventions not merely increase hazards, but supply the means of reducing them.

Delinquency.—As the Commonwealth Foundation of New York has established a definite program for the prevention of delinquency which is quite in accord with present-day theory, it is focusing attention upon the formative stages of character. The field of prevention is wide and calls for definite efforts of diagnosis that will serve as the basis for such physical, mental, and social treatment as may be helpful in overcoming hazardous tendencies among the immature.

The understanding of childhood is nowhere more necessary than in the home and the school, particularly for children who appear to be troublesome, variant, or maladjusted in their relations with individuals and specific elements in their environment.

In order to promote a better understanding of potential delinquents, the Commonwealth Foundation has determined to concentrate its efforts along definite directions: 1. They are aiming to develop the psychiatric study of difficult, pre-delinquent, and delinquent children in the school and the juvenile courts, to ascertain thru experience sound methods of treatment, based upon these careful individual examinations. Further, it is designed to provide courses of training along rational lines for those qualified and desirous of undertaking work in the field. 2. They are establishing demonstration centers in a number of cities, in order to indicate the worth and purpose of psychiatric study and treatment of the

type indicated, which applies to children who have been referred from juvenile courts, schools, and other agencies. 3. Medically and educationally significant is the plan to extend and develop the work of the visiting teacher, so as to make possible the essential early contacts thru our school systems, where every child constitutes a problem, in order to secure the data necessary for understanding its nature and conduct. 4. As a natural extension of this plan there is involved the utilization of many types of educational efforts to spread the knowledge and use of the methods devised and demonstrated.

While there may be a legitimate question raised as to the extent to which delinquency and crime can be prevented, it is indubitable that considerable communal gain will accrue from a rational investigation and plan of procedure for meeting the situation which at present exists. Certainly the attitudes towards the delinquent and criminal are undergoing marked alteration. There is a growing sense of the importance of justice in dealing with variant childhood. As a result there is a definite desire for definite information and facts relating to the relation of physical, mental, and social forces in moulding character and in affecting conduct. There is no fantastic illusion that the world is to be reformed and that vice and crime are to be eliminated. It is not unlikely, however, that as social justice and preventive medicine have greatly reduced the incidence of physical morbidity and humanity, social psychiatry may be effective in reducing mental disease and decreasing the instabilities of youth, as reflected in delinquency and crime.

The establishment of this country-wide investigation constitutes a valuable service, regardless of what the outcome may be. It

insures patient study, effective investigation, and a scientific approach to an inadequately known field of human expression. It is an additional force, whose guidance will benefit the juvenile courts, the school systems, but will also yield a volume of knowledge useful for raising the standards of child welfare, as organized in the homes and communities. Adequacy of treatment may be secured only thru adequacy of knowledge. And it is to this end that the Commonwealth Foundation is working.

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X-rays and Dental Infection.—Dependence upon the X-rays for the determination of focal infections is undesirable, according to C. N. Johnson, whose article on "The Relation Between the Physician and the Dentist", *New York Medical Journal and Medical Record*, August 1, 1923, can be read with interest and profit. Properly he objects to physicians presenting dogmatic opinions concerning the extraction of teeth, on the basis of focal infections that they diagnose from reading an X-ray picture.

His attitude calls for a larger degree of conservatism towards tooth extraction than has been evidenced in recent years, because it is not possible to differentiate between infections caused by the teeth and those caused by other tissues or organs. Hence a shadow on the radiograph calls for very careful judgment as to whether the teeth are the offenders. "The teeth are by no means the sole agency for spreading infection, and the radiograph is by no means infallible in its disclosures."

In view of the countless teeth that have been extracted without marked benefit to the patient, it is time to consider more carefully the actual existence of a diseased state due to difficulties arising from the teeth and

which might be removed thru their extraction. There is no question concerning the importance of dental examination as part of the routine of a physical examination. Teeth certainly play an important part in the continuance of health and in the causation of disease. But many dentists of wide reputation and high standing contend "that in the recent past an undue emphasis has been placed upon the teeth as causative factors in disease and that the X-ray as a diagnostic aid has been magnified out of all proportion to its legitimate possibilities". This statement should lead medical men to question the exaggerated idea of the relation of the teeth to general diseases, which at present appears to characterize the writings of numerous clinicians. It is true that dentists possibly are equally prone to stress in an extreme manner the relation of apical abscesses or dead teeth to all human ailments. Both professions are guilty then of reading into X-ray pictures the ideas which appear to afford some promise of relief.

As in other fields of medicine, a diagnosis should rarely be made on radiographic evidence alone. The clinical history of a patient is frequently of greater significance and may, indeed, cast considerable light upon the meaning of the shadows being interpreted. An X-ray picture merely reveals varying degrees of density of structures and variations in resistance to the passage of the X-ray. This photographic evidence does not speak in terms of infection, new growth, or toxins. The interpreter, on the basis of clinical experience, passes judgment upon what the underlying pathologic conditions may be. There is comparatively little difficulty when photographic plates of fractures are considered, but difficulties arise in the interpretation of foreign bodies, even in peripheral areas.

The difficulties of interpreting radiographs relating to the viscera is appreciated, even by the highly specialized radiographer. Hence there appears much truth in Johnson's comment, "When a radiolucent area is discovered in a picture at the end of a root there is no man of sufficient vision to tell whether it means an abscess or whether it is a thinning of the bone, which may have occurred years previously, when the tooth may have lost its pulp and in which today there is no infection whatever".

If dentists in their specialized field are unable to base diagnoses upon radiographs, assuredly physicians have reason to be cautious, even tho they are aware of the clinical history of the patient. The radiographer who carelessly deals in terms, or writes them in white ink upon the attractive charts or dental portraiture is fostering a tendency to inaccuracy in diagnostic procedure, which comes dangerously near to dogmatic exploitation of the doctor and the patient.

Apparently the question of extraction of teeth is being re-opened; and in order to arrive at the truth concerning the procedure and its value, there need be a closer cooperation between physicians and dentists. The place of the dental diagnostician is not one of isolation from his medical confrere, but rather should be that of a consultant. Dentistry is but a special phase of medicine and the dentist is to be considered a specialist as reasonably as the laryngologist, the proctologist, or the cardiologist.

As L. F. Barker remarks, "And in the decision as to whether a tooth dare be retained, the dentist should not be the sole arbiter; nor should the roentgenologist of the physician be the sole arbiter; the opinion of the dentist, the experienced roentgenologist, and the physician should all carry weight; the responsibility for decision

and treatment should today be shared". This represents a consummation for the future, but the basic idea is sound and until it becomes a part of current practice, radiographs of the teeth will be misread and a needless number of dental extractions will be performed by dentists at the request of physicians. And the radiographer will continue to label his radiographs without knowledge of the clinical history of the patients.

A Laboratory Aid to Physicians.—

The Public Health News, July 1923, issued by the Department of Health of the State of New Jersey, is a particularly useful document in that it provides an excellent résumé of the laboratory aids to physicians and sanitarians, as provided by the State of New Jersey. Altho the chief bacteriologist has written the document, he emphasizes in a sane manner the fact that the laboratory report is not to be depended upon as the sole basis of the diagnosis. It is pointed out that physicians frequently err in their manner of sending specimens to the laboratory, as the result of which satisfactory examination is impossible, and delayed reporting or no reports results.

The New Jersey Laboratory made more than 52,700 examinations during the year ending July 1, 1923, of which approximately fifty per cent. were for diphtheria, fifteen per cent. for tuberculosis, four per cent. for typhoid fever, four per cent. for gonorrhea, and twenty-five per cent. for syphilis. In addition there were examinations for malaria, rabies, and numerous other pathologic conditions coming within the category of specimens from suspected or known cases of communicable diseases, and their existent or potential carriers.

The extent of laboratory work and its effect upon public health no longer require defense to the taxpayers, nor commendation to the medical profession. State laboratories are recognized as legitimate agencies for the protection of communal health. It is necessary, however, that state laboratories receive the active support of the profession they directly serve. What holds true in the State of New Jersey is equally true in every state of the Union. In order to secure the maximum benefits of laboratory aid, it is necessary for physicians to understand the methods of collecting specimens, transporting them to the laboratories, and most especially of interpreting the reports of the examinations.

Inasmuch as the outfits for collecting specimens are provided without cost and there is no expense attached to securing the laboratory assistance, it behooves physicians to be careful in utilizing their opportunities so as to secure the promptest and most reliable returns from the laboratory examiner. By carefully following the bulletin issued, the service of the state laboratory will be enhanced in value and a considerable saving of time and money effected by reason of the decrease of wasteful and useless methods. Following the advice and directions will greatly aid the practitioner and afford him, and thus his patients, more reliable information to be considered in diagnosis.

The distribution of information referring to the interpretation of laboratory reports adds to the prestige of the laboratory and increases the amount of service which it purports to yield. The additional cost of informing physicians concerning practical benefits to be derived from more extensive utilization of public laboratory facilities is more than met by the improvement of public health that results. Publicity by city and

state is likely to be as effective in dealing with the medical profession as in appealing to the laity. Further, it furthers a type of cooperative support of undeniable value.

The plan of disseminating practical, helpful information of this character merits commendation and the imitation by the health departments of other states.

Indices of Nutrition.—In an effort to test out the dependability of various "Indices of Nutrition," Clark, Sydenstricker, and Collins, *Public Health Reports*, June 8, 1923, have applied various standards of nutrition to approximately five hundred native white children.

In their studies they have sought to grade their subjects in accordance with the Dunfermline scale, to apply a test that depended upon the variation of a single physical characteristic as a measure of physical fitness, as weight, and, third, to utilize a test that took account of variations of more than one physical characteristic.

Three standards were selected for comparison: First, the Wood tables, which consist of average weights of children, of either sex, by age and standing height. According to this method, any deviation of more than ten per cent. below the average is said to indicate malnutrition. A second standard was that of Dreyer, according to which individuals of a certain trunk length should weigh a definite amount, and also with a certain chest circumference at rest, a correlated definite weight should be achieved. No allowance is made for age. A deviation of ten per cent. or more below standard is regarded as abnormal. The third basis was the celebrated method of Pirquet, according to which the cube root of ten times the weight in grams, divided by the sitting

height in centimeters, should equal one hundred in a normal child.

The children studied were native born white children, whose parents and grandparents were born in the United States. They appeared normal, free from physical defects, and, as far as clinical evidence indicated, were of "good" or "excellent" nutrition. All examinations were made by an examiner of the United States Public Health Service.

It was found that, according to the Wood standard of height, weight, age tables, twenty per cent. of these children were more than ten per cent. underweight. According to Dreyer's standard, thirteen per cent. were more than ten per cent. underweight, and according to the Pirquet method, seventeen per cent. were underweight. The importance of these variations is further emphasized by a cross tabulation to ascertain whether children underweight according to one standard were underweight according to other standards. Of the five hundred and six children, two hundred and ten were classed as underweight by one or more of the three standards employed, but of these two hundred and ten children, all three standards agreed on only fifteen as being underweight. This does not indicate a degree of correlation that is acceptable for regarding them as adequate bases of judgment upon nutrition. Furthermore, the fact that in the terms of the Wood standard twenty per cent. of these children who were selected as the best specimens of health were recorded as underweight, raises a serious question as to the reliability of these standards in the hands of persons unfamiliar with their weaknesses. It has been rather a general practice among many to demand a higher weight for height and age than is represented in the Wood tables, but if this investigation means anything, it would sug-

gest that this advice is unnecessary.

There is also strong indication that the data upon which the Wood tables were constructed are not representative of the population of American born. It would suggest that the boys and girls whom he examined belong to a group socially and economically protected, so that their weight relations to height and age are above what probably constitutes the normal. This is still more emphasized by the new tables issued by Baldwin and Wood, in which it is patent that the schools whose children furnish the data for weight and height measurements do not represent an average mass of school children, but are distinctly private schools, in which economic, social, psychologic and religious elements play a definite part in determining the school population. And, tho these scales are slightly lower than the older Wood scales, they are still such as to lead to judgments of malnutrition, when none really exists.

There is ample evidence that the present standards of securing an index of nutrition merit careful investigation. The clinical evidence is entitled to a larger degree of consideration. Too general a reliance upon standards, that have been introduced widely, may result in false deductions, and secondary constructive efforts, whose necessity does not exist. We are still far from knowing what will serve as a scientific measure of malnutrition, in a form that is practical, simple, accurate, and constantly reliable.

Tuberculosis and Nationality.—The influence of dominant nationalities upon communal health is well illustrated in connection with a study of tuberculosis in New York City by G. J. Drolet, Statistician of the New York Tuberculosis Association, in their official *Bulletin*, May-June, 1923.

New York City, with its conglomeration of nationalities, affords a splendid opportunity to study the types of racial behavior towards tuberculosis, under approximately similar conditions of living. The Bureau of Records of the New York City Department of Health has classified the mortality due to tuberculosis from 1918 to 1921, inclusive, so as to indicate the seriousness of the disease among the seventeen leading nationalities or racial groups in the community. During this period the death rate from pulmonary tuberculosis in New York City, as a whole, averaged 122 per 100,000. Among the native born it was only 108, but among the Finns it was 342; the Irish 306; Norwegian 248; Greeks 228; Scotch 181; Austrians 165; English 136; German 133; French 130; Italian 122; Danes 110; Roumanians 92; Russians 86; and for the negroes 398.

There is a distinctly higher mortality from tuberculosis among the foreign born, as compared with the native born, tho the fact that the rates under consideration are crude rates leads to some degree of error. In fact, the standardized death rate from pulmonary tuberculosis of foreign born males in 1921 was lower than that of native born, but for females there was a higher mortality among the foreign born women than among the native born.

These marked racial differences are striking. Considering the Irish, for example, in New York City, with a mortality rate of 306, one notes that this rate is far higher than is existent among the Irish in their own land, where it varied from 218 in 1918 to 157 in 1921. The decline of the death rate in Ireland has been forty-five per cent. from 1904 to 1921, but the maximum of 288 in 1904 is far below the 306 registered in New York City for the four-year period from 1918 to 1921.

The explanation of this phenomenon involves a discussion of racial differences. It can scarcely be said that the high tuberculosis death rate of the Irish in New York City is attributable to alcoholism, or the comparatively low rate of 122 among Italians arises from any peculiarity in dietary. Nor is it wholly acceptable to attribute the remarkably low mortality rates of Russian Jews to their conscientious following of Mosaic sanitary laws. There is much reason to believe that the specific racial differences are more intelligible on the basis of a consideration of their exposure to urbanization and continuous subjection to the process of tuberculization thru long residence in cities and towns.

Races which, in their normal homes, are distinctly agricultural folk, would be more susceptible to tuberculous infection under conditions of city congestion than those who for many generations had been accustomed to more or less crowded populations. Just as the Indians were particularly susceptible to measles, and children in the rural population are more subject to diphtheria, so persons from sparsely settled communities, with ample freedom from urban crowding, have not a marked immunity to tuberculosis. On this basis one can understand the high mortality among negroes, Scandinavians, and the lower mortality rates among the Italians, Roumanians, and Russians. Next to the Jews, the Italians have had the longest period of exposure to town life experience.

Interpreting the Element of Heredity.

—The element of heredity may be interpreted as an acquired racial immunity that results from past experience and environment, with the continued elimination of those with weak resistance and consequently the building up of a higher degree of immunity,

as the result of the continued contact with the tubercle bacillus, as ever distributed by carriers during the ages. This interpretation suffices to explain the fact that the Jew has not merely a lower tuberculosis mortality, but a smaller morbidity rate than the Gentile, regardless of sanitary conditions, neighborhood and room congestion, and industrial employment.

That the environment, even for a nationality with a higher degree of resistance, is of considerable significance, is manifest by a consideration of the tuberculosis mortality among Russian Jews residing in three different sections of New York City. In a downtown district, with great congestion, and old law tenement houses, lacking in light and sanitary conditions, the death rate from pulmonary tuberculosis in 1922 was 83 per 100,000. In a newer section of the city, with more modern housing and more sanitary conveniences, the rate was 65, while in an entirely newly built section of the Bronx the rate was only 52. It must be remembered that all three districts were composed of practically the same racial group and to some extent of related families. Thus one perceives the influence of improved housing conditions upon the tuberculosis rate among a people who have already secured a higher degree of immunity to tuberculosis infection. Undoubtedly, similar conditions would be found to prevail among groups of other nationalities living under similarly varied conditions of housing.

Drolet makes the excellent epigram, "The inheritance of today was the environment of yesterday."

There is another side to this subject in considering the problems of restricted immigration, because the aim is to eliminate mainly nationalities of southern Europe. While the illiteracy of the Mediterranean

and Russian groups may be far greater than that in northern and western Europe, there is much evidence to indicate that their general physical stamina is by no means weaker when transported to American soil. The solution of the health problem certainly does not lie in the direction of exclusion, because of lack of education, altho it may be urged that the difficulty in assimilating this type of foreign born makes it undesirable to open the gates too widely. With the elimination of the mentally and physically unfit, as provided for under the immigration law, there should be ample protection to general welfare.

The Effect of the City on the Morbidity Rate.

Another question which merits consideration is the effect of urbanization upon the morbidity rate. Recognizing all of the difficulties which arise under epidemic conditions, to what extent does the development of cities and their particular forms of complicated living become effective in immunizing people so as to increase their resistance to numerous infectious diseases? Is the modern city, of itself, a factor in decreasing or increasing national vitality? How far need this influence be considered in comparing morbidity and mortality of rural and urban communities? At the same time how much stress should be placed upon the tremendous cooperative health and educational machineries that city life has created and utilized? Obviously, the answers to these questions will have little effect upon the direction of efforts to control disease. Certainly, the city, as a social unit, has been effective in improving, by conscious effort, the chances of survival of its citizens to a ripe age. The question as to its unintentional results upon human vitality warrants contemplation, not merely in connection with tuberculosis, but in relation to all other diseases transmissible by human carriers.



Prohibition and Europe.—The prohibition drama in this country has a very large and attentive audience abroad, but an audience somehow persistent in its belief that it is merely a comedy it is witnessing. The experiment on which this nation launched four years ago has a very serious side, serious socially and psychologically, but as we have ourselves failed to see in it only its grotesque side, we can hardly find fault with the European countries if they see only its absurd side. The question of prohibition is sufficiently confused on this side, tho we are very close to it, but on the other side of the Atlantic the question presents a conundrum which can only be answered with a smile. And the reason for Europe's skepticism, its cynicism, is not far to seek. Recently, former Representative Volstead, the father of the Act which bears his name, arrived in London and at once gave out an interview to the reporters in which he summarized the progress, which he characterized as "remarkable," of prohibition. Mr. Volstead arrived with the dignity of having been a member of Congress and Europe gave ear to his pronouncements in the faith that they would be authentic. What did the father of the Volstead Act contribute to Europe's knowledge of our experiment?

"Before sailing for abroad," he told the reporters, "I combed New York for forty-one hours, from the brownstone fronts on Riverside Drive to the humble shops on the Bowery that used to swarm with liquor and vice. I didn't find a single saloon open and I couldn't buy a drink anywhere, not even in a drug store. People don't even talk about drink any more in New York." Mr. Volstead was on his way to the Anti-Alcohol Congress at Copenhagen, where he would lay observations of this sort before the savants gathered there, and his findings and impressions would have great weight because of the belief that he, of all Americans, should have accurate information regarding the operations of the law for which he was

responsible. It is easy to understand the confusion of Europe in the face of such obvious inaccuracy. For Europeans have, after all, some excellent first-hand information regarding the state of mind of Americans who come abroad and make themselves conspicuous by giving an example of ineptitude such as the native at his worst rarely attains. They know that Americans, in their own environment, cannot be very much different from what they are abroad. And they take with a grain of salt any testimony favorable to prohibition which is brought to them. This is a pity, for, regarding the problem without prejudice, there are many good things to be said for prohibition, but, by a singular perversity on the part of the dry champions, they seem to make it a point to say the wrong things. Mr. Volstead's statements to the London reporters merely caused an indulgent smile at every English breakfast table the next morning, for the reports did not fail to mention that, as he was embarking aboard the liner at New York, a better informed newspaper man had offered to lead the former Congressman to a place within a stone's throw of the pier where he might put his foot on an unvarnished brass rail and say it in any language he liked. It is high time that both sides brought less prejudice and more sound reasoning to bear on their judgments regarding prohibition. The Wets would then be ready to acknowledge numerous benefits in limited areas, and the Drys would likewise be prepared to admit signal failure in other and more extensive areas. A less inimical attitude on both sides and a more generous tendency to get at the root of the truth would help to extract what good there is in prohibition and perhaps eliminate much of the bad. But, as a nation, we tend to extremes. The Prohibition Act is itself an excellent example of our extremity, and it is not surprising that its execution should be attended by such a stubborn unwillingness by either side to yield to reason. And

so the father of the Volstead Act informs Europe that geographically the millennium claims America as its most fitting setting, and his opponents inform Europe that God's Own Country is going straight to perdition. Europe, unable to make up its mind, smiles and continues to sip its *apéritifs* and *digestifs*, with a liberal pouring of *Mousseux* to finish off the day.

Our Attitude Toward Europe.—However, tho we give foreign countries cause to smile, they furnish us with very little reason for merriment. Europe is amused at our naiveté and loses no occasion to chaff us on that score. When an American returns from abroad with the conviction that the old pre-war game has been resumed and that America would do well to keep out of it, whether the opinion come from a Senator or a tourist, the Continental critic smiles indulgently and says, often in the editorial columns of a great paper: "What children you Americans are. You never grow up." Now it so happens that our naiveté, in some instances a deplorable defect, is one of the most valuable qualities at our command in making an estimate of the European imbroglio. A large number of Senators have been spending the summer abroad, and on their return they have voiced the opinion that the treacherous intrigues that were the rule in Europe before the war were once more being revived and that America could only lose by becoming involved in them. "Naiveté," says Europe. Well, for once, naiveté has proved a virtue. It is perfectly true that, in political matters, our standard is quite different from the one prevailing abroad. We are, to all intents and purposes, absurdly idealistic. We bring into our international politics a simple and unwordly faith that a new era has downed, that a new civilization should be building, that the brotherhood of man is a realizable aim. Europe, knowing the absurdity of such dreams, pursues its realistic course, building on the eternities such as hate, distrust and suspicion. Our Senators in Europe were like a delegation of social workers in a prison, seeing in the convicts nothing but bad men—an inadequate definition but an extremely accurate one for certain purposes. Every convict has his history, every crime has its motives, but our Senators are

not criminologists and they have preferred a simple definition to a complicated diagnosis. And there are instances when a simple definition, inspired by instinctive trust, is worth more than a considered judgment arrived at after a most minute examination.

The criticism by Europe of the unworldliness of our legislators was still being voiced in the foreign press when an incident occurred which gave considerable justification to the conclusions of our Senators and detracted much from the logic of their foreign critics—the occupation of Corfu by Italy in defiance of Europe, the League of Nations, and the interests of peace. More than ever before it has brought home closely to us the wisdom of keeping clear of European complications, such complications as may arise at any moment in response to the aspirations of an individual or a nation. To us it is amazing that, at a moment when the world seemed moving toward an enhanced respect for international kinship and mutual respect, a nation should have the hardihood to risk plunging one section of the world into war and to arouse hereditary hatred by a brutal method for which the experience of the war had seemed to provide a remedy. It has seemed even more amazing to us that a world chastened by one of the bloodiest struggles in history should emerge from this struggle still lacking the means to prevent any purblind and precipitous act which would endanger its renewal. Our amazement may be due to our naiveté. If that is the case, we would be proud of our naiveté. One of our worst faults as a nation is that we lack the courage of our virtues. Lord Birkenhead paid America a staggering compliment in describing President Wilson, and thru him ourselves, as idealists in a world pursuing nothing better than its selfish interests. Instead of showing our gratitude for such a compliment, we revealed only resentment. Lord Birkenhead, in a moment of bitter disillusionment, stated that the only policy that got an individual or a nation ahead in this oblique world was the pursuit of selfish interests, and he accounted in this way for President Wilson's failure abroad. That failure, in which idealism was hoodwinked by tricky selfishness, is, and Lord Birkenhead certainly meant it to be regarded as, one of the finest compliments that was ever paid to a sincere and well-meaning nation. It ought

to be accepted as such. Let Europe solve its Corfu problems. They are too complicated for our naive minds. But when Europe wishes our cooperation in solving such infantile problems as world peace and international decency we shall be more than ready to help.

The Death of Dr. John P. Davin.—

It is with sincere sorrow that we record the death of Dr. John P. Davin, a New York physician, who has long been known for his fearless discussion of public and professional problems. Not always did Dr. Davin's friends wholly agree with the position he took on the topics he discussed, but no one ever questioned the honesty and integrity of his purpose. Dr. Davin loved his profession and never missed an opportunity to emphasize the important place it fills in human affairs. Not infrequently Dr. Davin was misunderstood, but he fought for the right as he saw it, and did his best to get his colleagues to stand up for their interests, as he felt the earnest, hard-working medical men of the land were not receiving the recognition they should.

Dr. John P. Davin was born in Brooklyn, N. Y., of Irish parents from the County of Galway, Ireland, on December 1, 1854, and died, after an operation for rupture of the gall-bladder, at the Franklin Square Hospital, Baltimore, Md., Sunday morning, September 2, 1923, at 8:30. He graduated from the public schools in New York City, was a pharmacist for a number of years and graduated in medicine from the College of Physicians and Surgeons, New York City, in 1885. He served as an interne for two years at the St. Vincent's Hospital and thereafter engaged in the practice of his profession in this city. He was a genial, kind-hearted gentleman with a delightful personality, loyal to his friends to the fullest extent and was a careful and conscientious physician of the old school whose first interest was the welfare of his patients regardless of whether he received pay for his services or not. He was strongly opposed to the socialization of the practice of medicine in all its forms and wrote in both the medical and lay press on medical subjects, endeavoring to inform both the medical and lay public on medical questions. He was a clear, concise, capable, forcible and fearless writer and speaker and gave freely of

his ability to uphold the rights and privileges of the medical profession which he loved, and to oppose quackery, charlatanism and special privileges wherever they existed.

He was a member of the Catholic Club, the Catholic Writers' Guild, the County and State Medical Societies, the American Medical Association, the Medical Editors' Association and of various other medical societies, and was the Executive Secretary of the New York Medical Association.

He married Miss Mary T. Hernandez in 1885 and is survived by his wife, his son, Dr. Edward J. Davin, a Police Surgeon of this city, and his two daughters, Mrs. Philip Weyforth, and Mrs. Frank J. Weinham, both of Baltimore, Md.

Dr. Davin was a capable physician, a loyal friend, a clean fighter, and at all times a true gentleman. The world is poorer, indeed, by reason of Dr. Davin's death, for it is men of his stamp that constitute humanity's most valuable asset.

Athletics for Women.—

France has not taken kindly to the invasion of the Anglo-Saxon vogue of sports for women, and tho there is increasing evidence of the growth of such sports it is only in the face of either severe criticism or damning ridicule that they are becoming more popular among the gentler sex. The attitude of the French toward the function of women in society is more elemental than ours, and for this very reason, tho seeming reactionary and far behind the times, this attitude often enough seems more racially sound than our own. G. de la Fouchardière, who wields perhaps the most satirical pen on the Continent, has lately turned his attention to this subject with the following interesting result:

"I suppose that the young man who made me the recipient of his confidences is a disappointing exception in this preeminently athletic age. For we have a preeminently athletic generation, which is constantly running the risk of smashing its collar-bone or skull and shattering its ankles, but which, thank Heaven, is safe from meningitis and for which typhoid fever no longer has any terrors. The young man who confided in me was seated in his carriage, in the shade of a tree, close to a tennis court. He was crying. He did not cry silently, in the manner of youthful lovers of a romantic and



DR. JOHN P. DAVIN

bygone age. He cried noisily, as all youths of his age have cried in all eras. I inquired the reason for his sorrow. And I understood his response, for I comprehend the language of ten-months-old infants, who have not yet attained the gift of speech.

"I cry because I am hungry. My breakfast is nearby, over there, but it's being spoiled. Mother is playing tennis. Mother is a good woman, who insists on feeding me herself, but she is wrong in insisting on being an athlete. See how gracefully she leaps after a ball, like a cat playing with a spool of thread. Mother-cats, however, are more serious and leave such play to little kittens. I'm sure my breakfast is going to turn. I'm afraid I'll have butter for breakfast. Oh, don't think that I would prefer to have a paid wet-nurse. I have a few little friends who have paid wet-nurses. But they're in the same position as I. The nurses shake the shimmy in dance-halls, for there are even dance-halls for nurses these days. I am told, sir, that in your generation, babies were well fed. But we are living today in a corrupt era."

"Two hours later, I saw four children on the beach, ranging in age from three to eight. They were not playing but were contemplating the sea with that sad expression which we find only in novels.

"Mother has gone very far away, in a scull, and she was in her bathing suit. She hasn't returned. Maybe she has drowned. We hope she hasn't been eaten by the sharks."

"As a matter of fact, the athletic mother had been shipwrecked. Her scull had overturned and she had been saved by some fishermen who had seen the accident from the beach.

"What a strange age," an elderly lady said to me. "A frantic desire for sterile activity has seized people of every age and station. The most intelligent and sensible women abandon their duties as mothers and their obligations in the home in order to practice dangerous and exhausting exercises that go by the name of sports. In my time, sir, women——"

"Well, the following day I saw the same old lady on the beach. With bare feet and her hair flying, she was rushing in pursuit of a kite like a little girl. It appears she was taking part in a contest organized by one of our great newspapers. And the old lady had stolen the kite from some young

girls, who regarded her in blank astonishment.

"Children, you must rise in revolt, or things will come to a sorry pass. I suggest that you form a League of Children to suppress infantile sports among adults."

Spahlinger's Tuberculosis Serum.—An important statement regarding the partial vaccines of M. Henri Spahlinger, who is experimenting near Geneva in an effort to find a serum for the cure of tuberculosis, occurs in the *Lancet*. The statement is from the pen of Dr. D. Theodore Stephani, the distinguished Swiss physician, who reports his conviction that Spahlinger's vaccines "produce undeniable curative effects." Dr. Stephani asserts that for the past eight years he has used the Spahlinger serum in 189 cases and the vaccine in 105 cases. As a result he has drawn the following conclusions: 1. The serum is remarkable for its antitoxic action. 2. Each partial serum is effective in some form of tuberculosis. 3. This serum treatment can be successfully applied in the most severe cases when no other means could produce any results. 4. The partial vaccines have a marked curative effect.

Medical men in London are of the opinion that a good *prima facie* case has been made out for Spahlinger's serum but that further experiments are needed for definite proof of the efficacy of the method. So many eminent physicians of different nations have testified to the merit of the serum that it deserves the fairest and fullest trial. The British Red Cross has offered \$150,000 for Spahlinger's plant and laboratory, but he has refused to sell. A committee in England, comprising such men as the Archbishop of Canterbury, is trying to raise money to tide M. Spahlinger over his financial difficulties. Unfortunately this committee is greatly hampered by his secrecy. He is apparently in constant fear of revealing his secret, lest some commercial firm should get hold of his remedy and acquire all the credit for his success. But all who have seen him have been impressed by his obvious sincerity and earnestness. He was originally a Swiss doctor in law, but his interest in bacteriology became so great that he abandoned the legal profession and gave all his time to scientific research. "His labor-

atory," says one physician who has seen it, "is one of the best equipped I have ever visited, but the supply of his serum is very small and it takes a long time to prepare it. Spahlinger refuses to be very definite about the process of preparation but claims that it takes him three years to develop the vaccine from the tubercle bacillus. He is the only man I know who has obtained a vaccine from the tubercle bacillus which improves the patient."

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Dr. Bock's Candidacy for the Mayorship of Rochester.—It is well known that AMERICAN MEDICINE has neglected no opportunity not only of calling attention to the qualifications of trained physicians for filling administrative positions but of urging medical men to take a more active part in the public affairs of their communities and of the nation. Particularly have we been encouraged to do this because of the success that has been won by practically every doctor we have known who has been entrusted with public office requiring sound judgment and executive ability.

Convinced, therefore, as we are of the fitness of physicians for administering public positions, we have been much pleased and gratified to learn that Dr. Franklin W. Bock of Rochester, N. Y., is a candidate for the mayorship of his city. Dr. Bock is a physician who has long been known all over the country for his study of public welfare problems. The work he has done in Rochester has attracted much attention, for he has shown in no uncertain way how much a trained medical man can do to promote and improve the condition of the people in his community.

Dr. Bock, in addition to attending to a large practice, has taken part in a wide range of social activities, and has a large number of public achievements to his credit. For example, he organized, built and directed the first Day Camp for tuberculous children; he organized the nose and throat clinic of the Rochester Public Health Association and in 1907 outlined the plan which eventuated 13 years later in the Tonsil and Adenoid Clinic; he collected the money and built the first playground at No. 15 school; he helped organize and write the constitution of the Rochester Association for the

Blind; he was one of the organizing directors of United Charities; he was the first president of the Parent Teachers' Association of No. 15 school; he was actively associated in the Social Center movement; he is one of the organizing directors of the Rochester League for the Hard of Hearing; he has for fifteen years conducted the only clinic *in this country* in a public school for the prevention of deafness in school children (this is the first clinic of its kind in the world); he is treating nearly four thousand cases a year and receives no compensation whatever; he introduced lip reading into the public schools for hard of hearing children; he introduced lip reading into the night schools for hard of hearing adults.

He has worked unceasingly for the good of Rochester.



DR. FRANKLIN W. BOCK.

Dr. Bock's colleagues wish him every success for they know his ability and worth, not only as a capable, experienced physician, but as a true American citizen. Fortunate indeed will be the people of Rochester if they elect him mayor, for he will give the city an administration that will surely mean improvement in every department. The many physicians who are indebted to Dr. Bock for his numerous demonstrations of the benefits to be obtained from the successful conduct of public health agencies hope to see him win the office for which he is a candidate, for in making Rochester a better place in which to live, as he surely will, he will show the wisdom of electing trained and capable medical men to our highest municipal, state and national offices.

The Passing of the Country Doctor.—

How are we going to draw the line and define the legitimate field of the regular practitioner and that of the irregular, asks a writer in a recent issue of the *Journal-Lancet*. It cannot be done, at least, not in a manner that will effectively confine each to his proper sphere. Of course, we know that this condition will right itself, as other similar conditions have done, and that it is a stage in evolution and all that; but what makes us pause in amazement is why some unlettered chiropractor or osteopath can do so much *quasi-medical* practice without anything whatever to go on except a little cheap imitation of a real doctor and get by with it in this supposed enlightened age.

The closest examination fails to reveal any real scientific principle underlying the various cults or sects. The more we examine the less we find until we arrive at the central mystery of all, which is "nothing." We certainly make a mistake when we try to force these "bally hoo" practitioners to go to school and acquire a knowledge of anatomy and physiology and other fundamentals. If they should have their present technic buttressed by some real knowledge they would prove very formidable, and instead of being a passing show, they might harden into permanency.

The question that puzzles us most is, why are these people able to charm the public as they do? It cannot be from any merit that may reside in their healing methods. It must be because the public are easily charmed. If we inquire further we find that there may be some truth to this; anyway, it is obvious that we are unable to impress the masses with our skill and learning as we ought to, and there must be some reason deeper than mere superficial indifference on the part of those we are trying to serve.

Let us examine some of the sociologic conditions that obtain and see if we can get some light on the subject and find out, if we can, why the proud science of medicine should be so discredited.

We find today a universal smattering of knowledge among the people, which only serves to increase their contempt for learning and greatly increases their credulity. It also causes the superficial thinker to believe that popular intelligence is advancing by leaps and bounds while, as a matter of

fact, all indications point to the fact that the intellectual level of the masses is falling, if anything. We must distinguish between intellect and education. Intellect comes from heredity, while education comes from environment; and while it is true that educational facilities have increased greatly within recent years, the intellectual level, which is dependent on the racial qualities of the people, has shown no such improvement. So why should we marvel if the false prophets of medicine, like false prophets in every other walk of life, have a tremendous following?

Henry Clay's Physician Still Alive.—

Dr. Joseph Singer Halstead, 105 years of age, of Breckenridge, Missouri, was acclaimed the oldest living physician in America after an exhaustive survey recently made by *Medical Life*, one of our American medical journals that is fulfilling an important and worthwhile mission in the field of medical literature. Dr. Halstead has been a practicing physician for 83 years and is said to have numbered among his patients Henry Clay and many other notables of the old South in the ante-Civil War days, also the thousands of sick and wounded treated by the over-worked medical men of the Confederacy during the bitter days of the Civil War.

Dr. Halstead still lives in the little sleepy Missourian town of Breckenridge, where he has practiced for more than fifty years, and where he and Mrs. Halstead, now 94 years of age, raised their eight children who have since made them the proud grandparents of a flock numbering about eighty. Dr. Halstead was born at Louisville on March 4, 1818. He began the study of medicine at the Medical Department of Transylvania University in Lexington, Ky., then one of the finest medical schools in the country. He started his practice in 1840 in Breckenridge, and found the sledding quite hard for the young doctor. People then, as now, had an aversion to summoning a young physician, trusting more to grey hair and experience than to the more modern methods of those newly trained.

Dr. Halstead tells how in 1851 he was called into consultation by Mrs. Henry Clay to treat the slave children of the plantation who had contracted scarlet fever during the warm summer months. During his calls to

the Clay plantation the young doctor became well acquainted with Henry Clay and a warm friendship sprang up between the struggling doctor and the famous statesman. In the spring of 1851 Clay suffered quite severely from bronchial attacks and called in his young medical friend to combat the sickness. Shortly after he regained his full strength. Clay returned to the stormy political battlefields of Washington, where he suffered a sudden relapse, was stricken and died.

The County Society the Best Medium.

—The much-mooted question of medical publicity still continues to hold the public interest to a marked degree, states the editor of the *Medical Week* (Sept. 22, 1923), and the spread of the teachings of preventive medicine has caused an increased value to be attached to all health questions. This, in turn, has led to a widespread demand by the laity for more and better information about the human machinery, the disorders that assail it and the means that cure.

It is to the physician that the public turns for this knowledge. He has always been the symbol of health activity in their eyes, and they naturally feel that it is his duty to give them the enlightenment they want. Failing to receive it from him, they are apt to transfer more than their inquiries to other quarters.

It is only right and just that the profession be considered the final arbiter in health questions. If it is to continue in this light, tho, some way must be found whereby it can be the teacher, as well as the healer. Individual physicians have at times attempted a solution of the problem by individual efforts. Each time they have failed. For the most part, the reputable doctor is—and rightly so—unwilling to risk his ethical standing by a course of newspaper propaganda, particularly since the papers are so apt to play up his name and the sensational features of his remarks and ignore the substance of his articles. On the other hand, most of the syndicated health columns are, to all practical purposes, a farce.

In any consideration of the question of medical publicity, it is impossible not to arrive at the medical societies as the ultimate solution. We heartily agree with this, for as the editor of the *Medical Week* points out, it is here, in the assemblage of the best

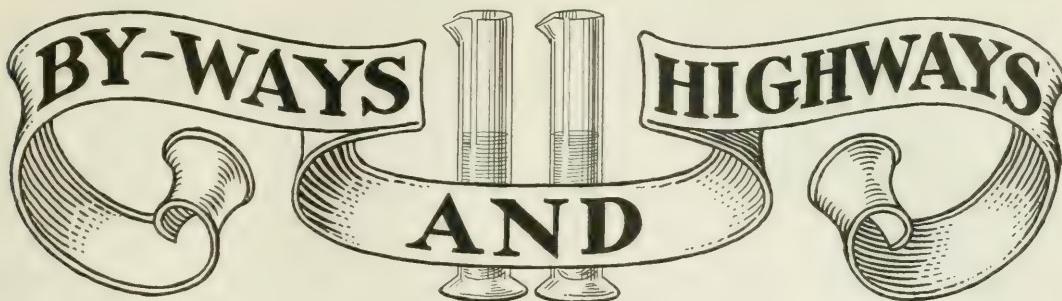
medical minds of a community, that the possibilities for health instruction are of the highest grade. These possibilities could easily be realized by a little cooperation between the societies and the press, the societies furnishing the articles, the newspapers their distribution. By publishing the articles under the comparative anonymity of a medical organization's name, individual advertising could be eliminated and there would be no possibilities of personal aggrandizement or gain.

This experiment has already been tried with a considerable degree of success by county medical societies in the West. There is no reason why New York County should not at least attempt it. With the city's opportunities in the way of press facilities and medical material, there is every possibility that by following an example we would also set a precedent.

Disease Prevention and Period Examinations.—

According to a prominent medical authority, "During the last quarter of a century all the great epidemic diseases except influenza have been brought, in part at least, under control. The acute respiratory diseases, alone of the infectious diseases endemic in temperate climates and causing high death rates, remain without adequate means for their prevention. While the prevalence of the infectious and some other preventable diseases has been rapidly reduced during this period, largely because of the application to disease prevention of the scientific discoveries of the time, yet on the other hand, cancer and the degenerative diseases of the middle and later periods of life have slowly but steadily increased their toll in deaths."

"It is, we believe, now the opinion of the most competent public health authorities that an annual or bi-annual general physical examination of every member of the community made by experienced and qualified physicians, with subsequent instructions as to a proper mode of life and the correction of physical defects and the treatment of diseased conditions or abnormalities found, will contribute more to the future reduction of our morbidity and our mortality rates and to the prolongation of life than any other single medical or public health procedure or activity."



An Old-Time Method of Treatment

Coming Into Vogue.—Cupping is an old-time procedure that most physicians have come to look on as obsolete. Within the past few years quite a good many practitioners have come to realize the value of cupping and Gubb has recently had a noteworthy paper on the subject in the *British Medical Journal* for April 14, 1923, in which he strongly advises resort to cupping in suitable cases. In pneumonia, in congestion of the lungs, in bronchitis, in pleurisy, in lumbago and sciatica, great and immediate relief can often be afforded. It is easy to apply: Half a dozen thick-rimmed kitchen tumblers—nothing can be better—a little cotton-wool or spirits of wine. If cotton be selected (the patient must be sitting up straight in bed) a loose tuft is placed at the bottom of the tumbler, and when everything is ready a match is applied to it and the open end of the tumbler is sharply pressed into the chest wall. There is no fear of a burn if the patient be sitting straight up. It is important not to place the tumblers on loose tissue (such as the anterior abdominal wall), and they must not be placed too near to one another, otherwise they are apt, when the skin is drawn up, to pinch it very disagreeably. They are left on for five or ten minutes, and are removed by depressing the skin with the nail so as to let in air, whereupon the tumbler falls off. The skin is then dabbed dry and dusted with talc—never rubbed. When wet cupping is contemplated the skin of the back must be thoroly washed with soap and water, then rubbed with methylated spirit or a weak solution of iodine before applying the scarificator as well as after. Then the tumbler with the lighted cotton is placed over the scarified spot.

Some people use spirits instead of cotton, and as a matter of fact it gives better results, tho it is attended by one or two risks against which one has to be on one's guard. A teaspoonful of spirit is poured into the tumbler and is swished around so as to moisten the sides. It is then poured out to the last drop, and a band an inch or so deep near the rim is wiped dry on the inside of the glass all around, so as to prevent the flame approaching the skin. The glass, held in the right hand, is gently rotated so as to prevent the formation of drops, a match is applied, and it is quickly placed on the skin and firmly pressed. All danger of a burn is avoided (1) by having the patient seated bolt upright, (2) by keeping the tumbler rotating until ready to be applied, and (3) by having a towel handy to extinguish the flame in the event of a drop of lighted spirit falling on the sheet.

Lived Five Hours After Breathing Ceased.

An extraordinary case of a man whose heart went on beating for five hours after he had ceased to breathe, says the editor of the *Critic & Guide* (June, 1923), was reported in a recent issue of the Manchester (England) *Guardian*.

The case was that of Norman Lees, a young clerk, who was admitted to the Manchester Royal Infirmary on November 30, last, suffering from a cerebral abscess.

He had been in the institution for several months when one day the nurse noted a considerable change in his condition. He collapsed and his breathing had apparently stopped, but his heart was still beating. The doctor in charge came at once in answer to her summons and artificial respiration was resorted to. After some minutes' work,

breathing was again audible and continued for a little time after the artificial efforts had ceased. Breathing then ceased again and artificial respiration, oxygen, drugs and other methods were tried, with the result that breathing again started and continued for a few minutes. A third attempt brought less results and the breathing finally ceased at five o'clock. For four hours afterwards, two doctors, three or four nurses and one of the attendants went on with the work of trying to restore the breathing, but failed to obtain any signs of life beyond the faint beating of the pulse and the heart.

The pulse first ceased to beat. About half-past eight, the heart-beats became gradually more and more indistinct and they finally ceased at nine o'clock.

The Manchester medical authorities believe the case is unprecedented in the annals of medical science. There have been instances in cases of cerebral disease where the action of the heart has continued for some minutes after breathing has stopped, but they claim that there have been no authenticated instances in recent years where the heart has continued to beat for nearly five hours.

Vacations for Physicians.—It must be apparent, states Barach (*Medical Review of Reviews*, September, 1923), that there is no group of men in society for whom it is more urgent that proper vacations be afforded. This is not founded, needless to say, on the theory that the average physician's lot is a hard one, or that his responsibilities and cares entitle him more than another man to a rest period. It is on humanitarian grounds again that the doctor's vacation assumes a significant aspect. There is no longer much argument that vacations increase efficiency. Science has gone further than the adage "all work and no play makes Jack a dull boy." It has demonstrated the noxious effects of acute and chronic fatigue both anatomically on the brain and other cells and physiologically in the decreased productivity of the involved mechanism. Certainly the lay public does not want a dull physician or one who is not working at his best efficiency. The doctor is wanted at his best, when all his faculties are alert and active. Observation, perception and deduction are not automatic facul-

ties of man. They are faculties that call for energy of the highest type, and are dependent for their best working on a machine that has not been dulled by continuous effort. It does not seem altogether a visionary attitude to see that there is an ethical responsibility involved in the doctor's vacation. It is freely admitted that holidays are needed in other occupations as well, but it is peculiarly important in that occupation which deals with preserving human life for the simple reason that human society commonly regards that end as supreme in importance.

It thus appears that the doctor's vacation is interwoven in humanitarian considerations. He may not take his vacation as freely as another man since human life may hang in the balance. On the other hand, since he deals in human life, it is important for him to be kept fit by proper relaxation and rest. This two-fold responsibility results in a two-fold obligation. It involves an obligation on the part of the doctor himself conscientiously to make the effort to secure a vacation in kind and quantity necessary for him to recuperate his powers to their highest extent. It involves an obligation on the part of the lay public to render him assistance both in the nature of their demands upon him and by a sympathetic understanding that his vacation is necessary for his best efforts in their behalf.

Surgery in Diabetes.—Now that insulin has become an essential feature in the treatment of diabetes, we are able to appreciate, points out an editorial writer in the *International Journal of Medicine and Surgery* (September, 1923), the wonderful improvement which it is destined to effect in the surgical management of sufferers from this disease. The prospects of successful surgery in these cases have been much enhanced. Undoubtedly, under the use of insulin in conjunction with the dietary regulations established by Joslin, Allen and others, many of the complications of diabetes necessitating operative intervention can be avoided, especially the gangrenous processes which are so commonly intractable and fraught with a sinister prognosis. Fortunately, the effect of this new remedy is usually so promptly manifested that the period of pre-operative preparation of the

patient can be materially reduced, and this means conservation of the patient's vitality. The diabetic subject whose blood sugar is being kept within approximately normal limits, also has a much better chance of survival after emergency operations and is far less likely to develop the acidosis with coma that so frequently occurs during the postoperative period and greatly delays recovery, if it does not lead to a fatal termination. But too implicit reliance should not be placed upon insulin therapy to the exclusion of those precautions which experience has shown to be essential in surgical work in diabetes, for even under the most favorable circumstances, the victims of the disease will continue to be poor operative risks. It is a matter of common observation that they tolerate ether badly, and if this anesthetic is selected, it should be given with the utmost care in small amounts, or as suggested by Joslin, a high authority, in a recent article (*Boston Medical and Surgical Journal*), replaced by spinal analgesia or gas oxygen anesthesia. According to his extensive observations, both of the latter methods have greatly lessened mortality. Another point that deserves earnest consideration is that the hyperglycemia may be no longer in evidence, any trauma, whether accidental or inflicted by the surgeon, may cause a sudden loss of carbohydrate tolerance with the development of coma and death. For this reason, it is important to refrain from operation until it is clearly indicated or imperative. Any injury, however trivial, should be sedulously guarded against infection and resulting gangrene. Injuries of the feet are especially common, and Joslin's advice should be heeded that the patient be warned about the dangers in cutting corns and toe nails, and about blisters from improper shoes, flat foot plates, and hot water bags. For the prevention of gangrene after a trauma of this kind everything should be done to keep up an active circulation by careful medication, by elevating the foot, massage and quick douching with hot and cold water, to which measures, we believe, the use of the diathermic current could be advantageously added. In fact, to obtain the best results in such cases, the physician and surgeon should cooperate—the former to prevent the development of gangrene, the latter to be ready to operate, if amputation is unavoidable.

The Rat and Human Disease.—Riley, in a recent issue of *Minnesota Medicine*, calls attention to the enormous economic losses thruout the country due to rats. It has been conservatively estimated that the cities of the United States lose \$35,000,000 annually from the depredations of these rodents. An equally conservative estimate would place the annual loss for feeding the rats of the Twin Cities at \$150,000 without regard to the damage to food and property, additional to what was eaten.

A phase of the rat problem which is wholly unappreciated by the general public is that of the relation of this pest to the health of man. Indeed, outside of the localities where there have been outbreaks of bubonic plague, even the physicians of this country take little account of the rat as a factor in the spread of disease. It is the purpose of this paper to call attention to some of the most definite ways in which these rodents may affect the health of man.

In common with a number of other animals, rats may convey pathogenic organisms in two different ways: In the first place, they may serve as purely *accidental carriers* or, secondly, they may be *natural hosts* of parasites which may be transmissible also to man.

Frequenting privies, drains, garbage heaps and the like, the habits and environment of rats are such that they may readily transfer the germs of various intestinal diseases to the food and drink of man. In a similar way they may spread ptomaines and various destructive molds and other fungi. Few accurate data regarding this aspect of the problem are available, but it is obvious that simple accidental carriage of contaminations must be reckoned with.

Much more serious are the cases where the rat itself serves as the host of the pathogenic organism, be it bacterial or animal in nature. The method by which the parasite is transmitted to other rats or to man may be either direct or indirect, depending upon the species.

Foremost in importance among the rat diseases transmissible stands the bubonic plague. The common view that this is a disease of warm climates and that northern regions need not concern themselves regarding it has no basis in fact. It is now universally recognized by students of the disease that it causes an epizootic among rats and other rodents and that it spreads to

man by the agency of fleas.

Weil's disease, or spirochetal jaundice, is another widespread disease of man which only within the past few years has been definitely traced to rats. The causal organism, *leptospira icterohemorrhagiae*, was discovered in 1915 in the urine and kidneys of wild rats in Japan. The findings of the Japanese investigators have been abundantly confirmed by workers in various parts of the world, including the United States. It is believed that the organism escaping in the animal's urine is transmitted to man from contaminated soil, or thru food or drink.

A related disease is the so-called "rat-bite fever," or "sodoku," a relapsing fever of long duration which sometimes follows a rat bite. The causative organism, *spirochaudinna morsusmuris*, lives in the mouth of the animal.

Longevity of Pathogenic Bacteria in the Tissues.—The persistence in the body of pathogenic bacteria to which their host is, or has grown, immune, says an editorial writer in the *American Journal of Surgery* (September, 1923), is instanced, for example, in diphtheria bacilli in the throat, and typhoid bacilli in the gall-bladder, of "carriers." That the urethral crypts may harbor gonococci for many years is also generally known. But it is not only in the cavities and spaces of the body that bacteria may linger indefinitely without symptoms. The phenomenon also occurs in the solid tissues. Thus, a typhoid bone abscess may manifest itself many years after the enteric infection. We have seen the bacillus pyocyaneus, a secondary invader, apparently disappear from a wound that went on to healing and reappear when the same wound was reopened at a secondary operation. We have also seen actinomycosis in the groin, apparently definitively cured, reappear at intervals of six and seven years. The staphylococcus aureus, the common invader of bone, may lie dormant in the osseous tissue for many years after the storm of the acute osteomyelitis has passed, and then reveal its presence by some milder suppurative process.

The longevity of pathogenic organisms in

the human tissues is a phenomenon that must be borne in mind in diagnosis; their attenuation is a phenomenon that may well be taken into consideration in surgical therapeusis.

Leprosy Amenable to Treatment.—

Leprosy is in a measure amenable to treatment, says the U. S. Public Health Service. During the last ten years (1912-21) a considerable percentage of the lepers segregated at the Kalihi Hospital near Honolulu and on Molokai Island have been paroled; that is, they have been released as being "not a menace to the public health", but have been required to report for examination at certain intervals which vary with the individual case. Of those paroled about 13 per cent. have relapsed and have returned to segregation; but about one-fourth of these were later paroled for the second time. In all, 242 lepers were paroled; 31 relapsed and seven of these were later paroled. Ten were completely released from parole.

The chance of arresting the disease decreased with the length of time that it had been allowed to go without treatment unless this period was seven years or more. Apparently patients who survive without treatment for seven years possess powers of resistance that slightly increase their chances for marked improvement under treatment.

Those who desire it are treated with chaulmoogra oil and its derivatives.

The parole system was begun in 1912 and has worked admirably. Those paroled appear to have told their friends that the conditions existing at the hospital were good; and the mere fact that they had been released has shown that segregation might lead to cure and not to lifelong confinement as it almost invariably did previous to 1912. As a consequence many lepers, instead of concealing the disease up to the last possible moment (and thereby spreading it through the community) are now surrendering of their own accord and taking treatment. This earlier surrender and earlier treatment hasten the degree of improvement that will secure parole and will later, perhaps, complete release. About 70 per cent. of these who have been paroled were in segregation for less than two years.



EXPANDED TONSILLECTOMY—THE ENUCLEATION OF THE FAUCIAL TONSILS TOGETHER WITH THEIR INFECTIOUS BRANCHES.*

BY

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Experimental medicine has probably yielded no more firmly established fact than that of the causation of chronic systemic diseases by necrotic material harbored in the tissues of the body, and yet we are only at the threshold of a knowledge of the extent to which such a cause is operating. Many of the fixed sources from which the poisons emanate have been definitely located and other hitherto hidden sources are being constantly revealed. In the head, the faucial tonsils and teeth are regarded as the chief culprits, which after detection and correction have brought about a new order in the elimination of disease and the reestablishment of health. And we have the best of reasons for believing that the maintenance of health is to be still further assured and that the degree of the reestablishment of health is to be increased, for as has been shown elsewhere,^{1, 2} the

faucial tonsils in diseased states are but a part of the lymphoid structures in the throat which contain foreign material capable of producing systemic disturbances. It also has been shown that the infratonsillar nodules are connected with the bodies of the tonsils by continuous underlying capsules (Fig. 5-A) and should, therefore, be regarded as branches of the tonsils and not separate structures. Normally those branches are infinitesimal in size and cannot be recognized as entities, but as a consequence of acute inflammatory or compensatory processes they become developed in varying degrees, in some cases acquiring a bulk which equals, or more than equals, that of the tonsils proper. All developed branches are diseased, for the reason that in their development crypts are formed which are capable of retaining foreign material in much the same way that it is retained in the crypts of the tonsils themselves.

That tonsils which are not definitely diseased should not be removed is axiomatic, and there is now no excuse for inability to determine the character of the contents of any tonsil and its branches. The tonsilloscope³ is eminently fitted for their exploitation. When, however, a well-defined diseased condition in the tonsil is exposed by tonsilloscopy the propriety of the eradica-

*Read by title before the American Laryngological Association, Washington, May 2, 1922.

¹T. R. French: Retention Crypts in the Infratonsillar Nodules as Harbors of Pathogenic Bacteria, *New York Medical Journal*, June 19, 1920.

²Idem: The Tongue as a Source of Systemic Infection, *New York Medical Journal*, June 21, 1922.

³Idem: The Tonsilloscope, *New York Medical Journal*, May 20, 1916.

tion of that body by tonsillectomy cannot be doubted. As the infratonsillar nodules, or tonsil branches, when developed are always diseased, and as they are always developed when the tonsils are definitely diseased, it follows that tonsillectomies should be made more expansive than they are at present by including the branches in the enucleations. The branches lie on the surface of the walls of the laryngopharynx and are removable by getting under their capsules and then sliding them off of their attachments to the underlying basement membrane. From the basement membrane they are as separate and distinct as are postage stamps from an envelope to which they are only lightly adherent. It is this interesting and important anatomical fact which belies the possibility of the occurrence of fancied faucial deformities from gross contractions after the proper removal of those paratonsillar structures.

Naturally enough the anatomical area in which this clinical study is laid is one to which we are as yet but little accustomed, for it always requires time, often much time, to focus attention and understanding upon a freshly tilled field, especially when it lies within the confines of the human body. This study was undertaken to determine if it was not possible to find a simpler, more accurate and expeditious method of removing the well-defined lymphoid structures which are grouped below and close up against the faucial tonsils, and the purpose of this communication is in part to report the results of the study thus far and also to plead for an expansion of the fields of operation in tonsillectomies to meet an almost universal need, for practically all diseased tonsils in subjects above the fifth year of life are accompanied by

developed and, therefore, diseased branches, and even below that age they are not infrequently present.

Preparation of the Field of Operation.—The studies of the tongue which were reported in a companion paper to this writing² leave no doubt that the mouth and throat are the most unclean and bacteria-laden cavities of the body. The general surgeon would hesitate to break thru the skin anywhere while it was covered with a marsh of necrotic material such as is almost invariably found on the tongue. The dorsum and base of the tongue in perhaps every human subject above the age of infancy, have spread out upon them a more or less thick layer of cheesy detritus, made up of a thousand small tufts of necrotic material caught upon cactus-like papillæ, very much as cotton is wrapped around the ends of applicators, which in itself is productive of impairment of the health of the host. The lowermost stratum of that material may remain unchanged for years, possibly even for a lifetime, and is frequently found to be rich in the most destructive varieties of microorganisms. It is a logical deduction from the facts which have been revealed that this condition will prove to be the outstanding factor in the heretofore unexplained cause of the septic explosions in brain, lung, heart and joint which occasionally follow tonsillectomies. Such occurrences are believed to be due in part to aspiration and partly to the flooding of the wounded surfaces with the material which escapes during the manipulative movements in tonsil operations, but such explanations alone would seem to be a far cry when confronted with the septic possibilities of the field of necrotic tissue which lies like a blanket over the entire length of the tongue.

Impressive proof of the deleterious effect of this material upon extensive wounded surfaces has seemingly been abundantly presented in the form of the improved character of the healing processes after tonsillectomies in subjects whose tongues were repeatedly shaved in preparation for the radical operations. While the wounded surfaces in all such cases were covered with a thin slough, it was of a noticeably less depth than that heretofore observed. The healing in every case was relatively rapid and was accompanied by less soreness of the throat than has usually been complained of. There was no odor, the white coating was quickly dissipated and the time of recovery was shortened. The best results were obtained in subjects whose tongues had been shaved five or six times and whose mouths had been washed out with a 50 per cent. solution of alcohol immediately before operation. Such post-operative clinical pictures give undoubted assurance that aseptic preparation of the mouth for tonsillectomy and adenoidectomy will secure more rapid healing, and will also assist in obviating the occurrence of remote septic infections.

Advantages of the One-Piece Operation.—In an earlier paper in which enucleated infratonsillar nodules were described,¹ the belief was expressed that further trials would undoubtedly result in finding a way to remove in one piece most, if not all, of the connected tonsillar structures on one side of the throat. As we have yet to learn that such a way has been found by any of our ingenious colleagues, we venture to bring before you the results of our efforts to devise easy and safe means for removing the faucial tonsils with their trunks and pharyngeal branches, as entities, or as separate segments, for in this experimental

work we have kept constantly in mind the necessity for not only finding a means for removing the structures in one piece but also for still further facilitating the removal of the tonsillar trunks and their branches when they and the tonsils must be taken out separately.

The one-piece operation saves time. It also enables one by the appearance of the specimen to determine positively whether every vestige of diseased lymphoid tissue on one side has been removed. And, as an added advantage, the enucleated one-piece specimens make graphic anatomical displays which stimulate the interest of the expert pupil and lighten the labors of the teacher. A pupil may show but scant interest in witnessing the removal of separate segments of lymphoid tissue from the walls of the laryngopharynx, but such interest is usually converted into enthusiasm when the tonsil and a large part or the whole of the attached lymphoid structures are in a single connected piece spread out before him.

The method which has been developed for carrying out the one-piece operation can be easily understood and put into practice by any surgeon who is familiar with the use of the tonsillectome or guillotine. The scheme of the operation is based upon the Sluder technic of tonsillectomy and differs from it in that it does not employ the alveolar eminence dislocation principle and also in that the sweep of the distal bar of the tonsillectome is made to include the pharyngeal branch, its trunk and the body of the tonsil, instead of encircling the tonsil alone. To achieve this result it was found necessary to substitute an angular for the oval aperture of the Sluder guillotine so that the branch structures which lie in recesses could be readily caught and held by the distal bar. It also was necessary to mould

an improved block to the outside of the neck and edge of the jaw for the purpose of supplying an artificial wall against which pressure could be made with the distal bar while it was being swept under a branch.

Instruments Used in the Technic of Expanded Tonsillectomy.—The *tonsillectome* (Fig. 1) has a very slightly bowed distal bar which, however, is so nearly straight that it leaves

As a thin distal bar and side bars are essential for getting under the end of or breaking thru the body of a branch, those features of the instrument are made as light and thin as is compatible with the heavy pressure to which they must be subjected in the final severance of tissues. A ring has been added to the end of the thumb lever for the purpose of withdrawing the blade when it is

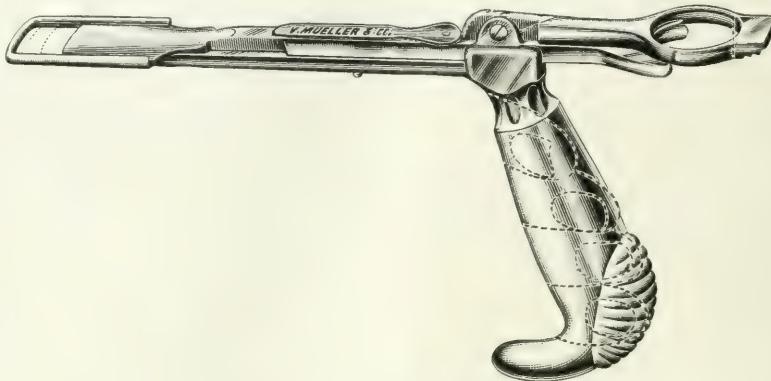


FIG. 1. Tonsillectome for expanded tonsillectomy.

the aperture practically square. This arrangement provides two nearly right angled corners for the distal bar which are required to engage the branches which lie in the angles of the walls of the pharyngeal cavity. The distal bar itself has a slight wedge shape to facilitate its entrance under

felt that all the tissues to be removed have not been pushed thru the aperture before the blade is pressed home. With the exception of the particulars just noted this instrument is essentially the same as the justly renowned Sluder guillotine.

The *dissector* (Fig. 2) was designed for



FIG. 2. The branch dissector.

a branch or trunk. The side bars are straight on the outside and slanting on the inside, making their front faces wedge-shaped, but more decidedly so than the distal bar. The purpose of the wedge-shaped side bars is to break thru and slide under the lingual branches when it is desired to remove those tonsillar appendages.

the dislocation of the branches before the tonsillectome is applied. When the patient's neck is properly supported on the outside, the distal bar of this instrument can be made to slide under and dislocate any tonsillar branch however small. The curved end of the instrument is intended to dislocate and detach the lingual branch

if it is desired to remove that often extensively diseased but always protective covering of the base of the tongue.

The *block-moulds* (Fig. 3) are made of hard rubber. They have soft rubber shelves which fit under the edges of the jaws of subjects of every age. The bodies of the blocks are shaped in such a way that they will catch and cling to the posterior faces of the angles and the inferior edges of the

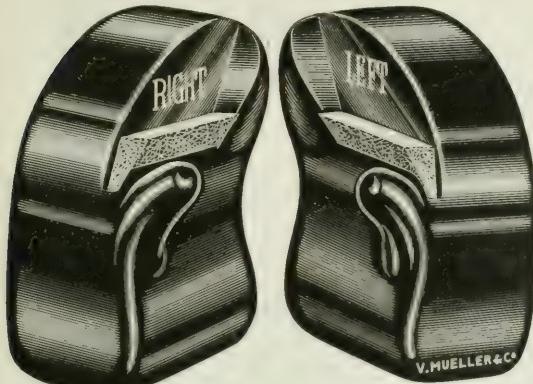


FIG. 3. The block-moulds.

jaw. This makes it possible to adjust and hold the blocks securely and accurately in their proper positions, for unless they are held accurately the pharyngeal branches will rarely be secured in their entirety—as one of them is shown to have been in Figure 6-C.

The mucous membrane which covers the lateral pharyngeal walls and is reflected over the pharyngeal branches and their trunks is so elastic in children and adolescents that the one-piece operation is much easier and simpler in them than in adults, but the method of operating about to be described is for all ages performed in the same way.

Technic of the One-Piece Operation.—The one-piece procedure is carried out as follows: An assistant adjusts a block-mould around the angle and under the lower edge of the jaw on the side to be operated upon, and holds it firmly and steadily in position.

The dissector is then passed over the mound of the tongue and down into the pharynx toward the side to be operated upon, at the same angle as that in which the tonsillectome is represented as being held in Figure 4. When the distal bar of the dissector has reached the lateral pharyngo-epiglottic fold the movement is reversed and the bar is swept upward firmly against the block-supported wall until it reaches the tonsil. This movement should be repeated several times. The fact that the aperture of this instrument is nearly square should be kept in mind in making the sweep, for it is essential that the distal bar should lie flat on the side wall of the throat as the instrument ascends. All that is necessary to carry out this mechanical feature is to rotate the hand slightly forward during the upward sweep. It will now be found that the trunk and its pharyngeal branch are freely movable under the touch of the forefinger and are, therefore, in a perfectly prepared condition for the enucleating movement of the tonsillectome.

While the block-mould is still being held in place against the jaw and neck, the next step is the introduction of the tonsillectome. Its position upon introduction, the grip of the hand upon the instrument, and the manner in which the block-mould is adjusted and held in place are clearly illustrated in Figure 4. From the position of the tonsillectome as shown in this figure, it is carried down on the side to be operated upon until the distal bar meets with the resistance of the lateral pharyngo-epiglottic fold. The handle is then tilted upward until it is slanted about 5° above the horizontal axis of the head. With the instrument in that position the distal bar is pressed firmly outward against the block-supported wall and while maintaining firm pressure against the block and jawbone the bar is drawn upward in a straight line toward the inferior pole of the tonsil. As the bar moves upward the handle is turned backward so that when the bar has reached the inferior pole of the tonsil and the shaft has reached the corner of the mouth, the flat of the shaft will lie at an angle of about 45° to the horizontal axis of the head. The instrument is then carried still further upward, with the shaft at the same angle, for the purpose of foregathering the tonsil. Meantime, the forefinger of the disengaged

hand is introduced into the throat to press the tonsil backward and downward in order that the aperture will engage it as the bar is slid upward. The upper corner of the aperture, now behind the tonsil, should be carried upward into the dome of the tonsil fossa high enough to put the palatine

tractor or by drawing the tongue forward, while the blade is started under its free edge. The forefinger then follows the edge of the blade until all the tonsillar tissues are felt to have been pressed under it. The thumb lever on the shaft of the tonsillec-tome is then raised until moderately firm



FIG. 4. Shows position of tonsillec-tome at beginning of expanded tonsillectomy and also manner of holding block-moulds against the jaw and neck.

tissues on the stretch. From that point the aperture is curved forward over the top of the tonsil while the forefinger manipulates the tonsil, now against the anterior pillar, wholly thru the opening. When the distal bar or the side bars of the aperture are felt thru the anterior pillar, the pillar should be drawn forward, either with a re-

tractor or by drawing the tongue forward, while the blade is started under its free edge. The forefinger then follows the edge of the blade until all the tonsillar tissues are felt to have been pressed under it. The thumb lever on the shaft of the tonsillec-tome is then raised until moderately firm pressure is applied, when after a half minute of hemostatic pressure still greater pressure is made upon the thumb lever to sever the constricted tissues. During the whole of the procedure, from the time the distal bar is swept under the end of the branch until after the blade is closed, firm pressure of the enucleating instrument

against the supporting block or the jawbone must be evenly maintained.

The object in drawing out the anterior pillar before the blade of the tonsillectome is started under it is to conserve its delicate edge. This membranous sidewing of the fauces is not unlike a breadth of cloth with a selvedge edge. Remove the edge of either and the adjoining substance will ultimately

The throat is usually a satisfying acoustic chamber, and surgeons should be at great pains to avoid alterations in its natural architecture. The quality of the voice is often changed for the worse by the loss of the anterior pillar and its destruction must, therefore, be regarded as out of place in an ideal tonsillectomy.

Technic of the Two-Step Operation.—The

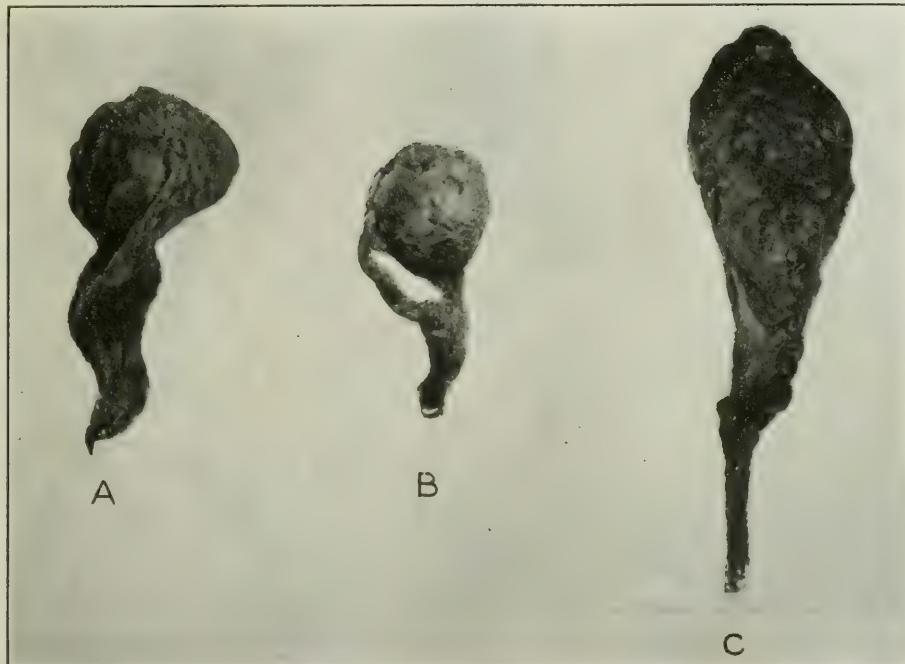


FIG. 5. Photographs of one-piece specimens removed by the method described in this paper. A, profile view of a slightly macerated expanded tonsil removed from a boy eleven years of age. It shows the continuity of the capsule of the tonsil and pharyngeal branch, which fits over those structures as a hood with a long cape fits over the head and upper part of the body. B, capsule aspect of a one-piece specimen removed from a boy ten years of age, in which the branch is only partly attached to the inferior lobe of the tonsil, but is prolonged upward over the posterior margin to the superior lobe. C, capsule aspect of tonsil, trunk and pharyngeal branch removed in one piece from a man thirty-five years of age. The tonsil was adherent. Such tonsils enucleate either inside of capsule or well outside of infiltrate. In this case the distal bar insinuated itself closely outside of the lower half of the capsule but swept off a thin layer of muscular tissue upon the upper half.

fray out and crumple up. If more than the free edge is removed, then after healing there may be left only a cord-like line to show where the anterior arch had been. When in shaping an audience chamber a little happy chance is mixed with the clever designing of a master architect and results in the attainment of satisfying acoustics, the possession of such a chamber by any community is regarded as an asset to be jealously guarded from ruthless alteration.

one-piece procedure is not usually as applicable to adults as to children and adolescents. The infratonsillar structures in adults are larger and longer and the mucous membrane surrounding the branches although very elastic cannot always be made to stretch as far as in the throats of younger subjects. As a rule we do not, therefore, regard it as advisable to attempt to carry out the one-piece technic in adults, that is, above the age of twenty-five years, for while

it may succeed it frequently fails, and when it fails the injury of tissues made by the attempt contributes an element of discom-

fort to the patient in the stage of active healing. The tonsils proper should, therefore, in such cases be removed before the

branches are enucleated. It simplifies matters to use for both tonsils and branches the tonsillectome described in this paper,

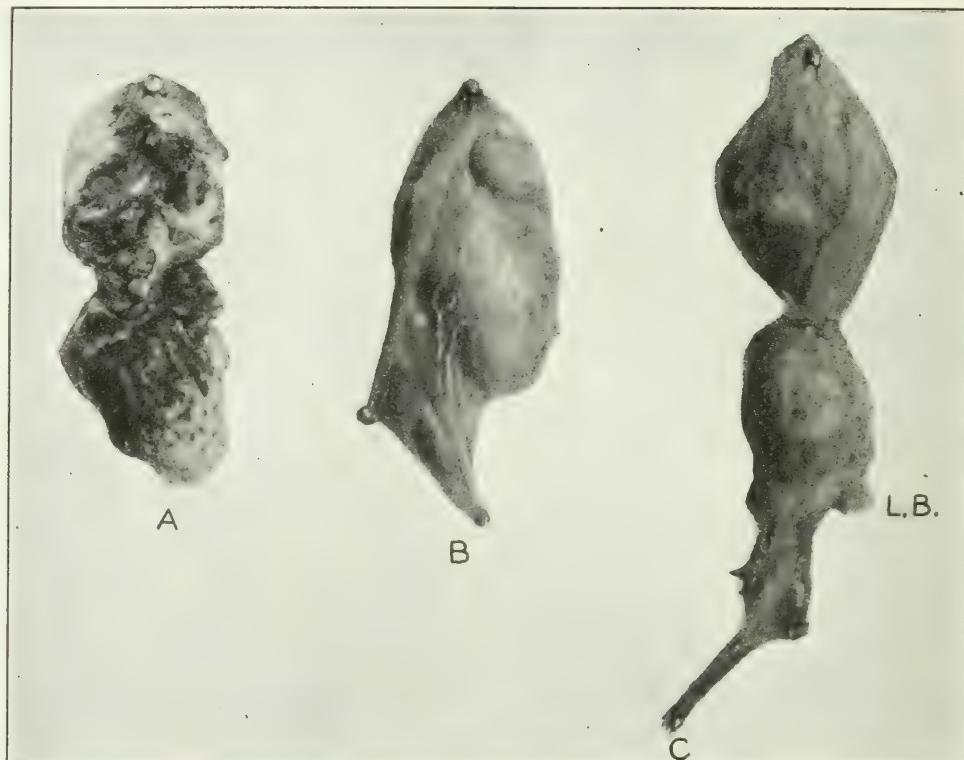


FIG. 6. Photographs of specimens enucleated with snare and guillotine. A, pharyngeal aspect of tonsil (between pin and heads) and a large trunk, removed by Dr. C. W. Stickle from a woman thirty-three years of age. The two structures were enucleated separately with a snare. The openings of many retention crypts can be seen on that part of the surface of the trunk which corresponds to the inferior lobe of the tonsil, but there are, in addition, quite a number of such openings in the shaded area. While such massive trunks occur only occasionally, those of lesser size, such, for instance, as specimen C, in this figure, are quite frequently seen in adolescents and adults. B, and C (slightly enlarged), represent the tonsils, trunks and pharyngeal branches from a boy fourteen years of age, removed by Dr. G. R. Hageman with a Demarest-Sluder guillotine and the block-moulds. The photographs were taken in an adjoining room immediately after operation while the tissues were fresh and expanded. An immediate photographic "follow up" is the only possible way of obtaining accurate reproductions of such structures in all their fulness. B, represents the right tonsil, trunk and part of pharyngeal branch, in one piece. C, represents the left tonsil, trunk and all of pharyngeal branch in two pieces—as shown by the pin heads. This good-sized trunk contained a large amount of necrotic material. The letters L. B. in this figure indicate the beginning of the lingual branch, just after leaving the trunk, at the point at which it was severed in the enucleation. These specimens illustrate the fact that while enucleated tonsils proper are, generally speaking, not unlike each other in size and shape, their trunks and branches are apt to present an entirely different appearance on the two sides.

It is a pleasure to acknowledge the courtesy of Dr. Lionel L. Lapointe, Attending Oto-Laryngologist to the Long Island College Hospital, in arranging and photographing the specimens shown in Figures 5 and 6.

fort to the patient in the stage of active healing. The tonsils proper should, therefore, in such cases be removed before the

as with it the body of the tonsils can be enucleated with ease and simplicity by applying it with the La Force technic. But,

of course, for this step of the two-piece operation any method of taking out the tonsil may be employed. The pharyngeal branches and trunks should then be removed in the same manner as has already been described for the one-piece operations, except that the dislocated lymphoid tissues should be swept up into the now empty tonsil fossæ and against the anterior pillars, thru which the forefinger manipulates them into the grasp of the blade of the tonsillectome.

Figures 5 and 6 show a few reproductions of various types of one- and two-piece specimens removed with various instruments. Even the trunks of any size can be enucleated with the snare (Fig. 6-A) and the guillotine, without the aid of the block-moulds, the pharyngeal branches cannot be so corralled without the use of those supports on the outside of the neck. The explanation is that the trunks, like the tonsils, lie upon the jawbone, while the branches overlie the flexible tissues of the neck and can be underswept only with the aid of accurate outside support.

All that has been said of this operation is equally applicable in adults, adolescents and children even tho there is usually a difference in the anatomical attachments of the branches at different periods of life. In children the pharyngeal branch is attached to the lower margin of the inferior lobe and the posterior margin of the body of the tonsil and at times extends upward, as a practically separate structure, even to the posterior aspect of the dome of the superior lobe (Fig. 5-B). In adolescents and adults the attachment of the trunk of the branches is not alone to the inferior and posterior margins of the tonsil, but in a varying degree to the anterior margin as well—thus partly surrounding the tonsil as the thumb and forefinger of one hand can be made to surround the closed fist of the other hand (Fig. 5-C).

Technic of the Enucleation of the Lingual Branch.—We have enucleated but one full-sized double lingual branch of the faucial tonsils from the margin of the base of the tongue, but that specimen provided important information. From it we learned that the branch is a continuous structure extending from one faucial tonsil to the other and that it has a well-developed fibrous capsule. It is looped around the lateral and inferior

margins of the lingual lymphoid apron from which it is anatomically separated and to which it is only lightly attached. We have elsewhere described this branch¹ as apparently having free ends near the median rhaphe. This specimen showed, however, that a deep notch at the median line was the reason for the visual deception, for the two sides are connected below the tissue which was before supposed to be the surface of the musculature of the tongue, but which we now know is the lingual lymphoid apron, by something more than half of the thickness of the body of the branch. As, then, this is a continuous structure it is apparent that its enucleation can only be accomplished by breaking thru the body of the branch to get under its capsule. The wedge-shaped side bars of the tonsillectome are well adapted to such a purpose. By crowding one bar, face down, thru the branch to the firm muscular base it can be made to separate the structure from the lymphoid apron and the basement membrane, just as a strip of braid is separated from a coat by severing the attaching threads. The branch peels off as if it were a rope of wet paper, separating from the adjoining layer of lymphoid tissue as does the side of a broken frame from a picture. When the crumpled mass reaches the lower margin of the tonsillar fossa it is swept up to and against the anterior pillar, put thru the aperture and cut off the same as a trunk and pharyngeal branch, when those structures, as previously described, are removed separately.

With the exception of the single experience in enucleating the double lingual branch just noted, we thus far have been content to shave off the tops of those structures with the tonsillectome, for the reason that that procedure removes the mouths of all the crypts and completely undercuts many of the superficially placed crypts as well. Until further experience teaches us that the elimination of those rather extensive tongue structures, capsules and all, will not be likely to leave an enduring dry spot in the throat, we will not feel justified in laying bare so large an area of the tongue's surface.

Our somewhat long record of enucleations of tonsillar trunks and their pharyngeal branches, now numbering several hun-

dreds, satisfies us that the after-effects, both early and late, of such enucleations are much the same as those of the removal of the faucial tonsils alone. Hemorrhage, either arterial or venous, has not been appreciably increased and the expansion of denuded surfaces has added but little, if any, discomfort to the patient during the process of active healing. This has been especially true in subjects whose mouths had been surgically and medicinally cleansed as a preliminary to operation. And we have yet to hear of any later after-discomfort in the throat, even from subjects whose trunks and pharyngeal branches were removed with the tonsils two or three years ago, which could be attributed to the expansion of the tonsillectomy.

Surgery, like most of the other phases of life, is influenced by fashion. A thoughtful writer in commenting upon our story of the tonsil branches as sources of infection, assumes that they are so, but questions whether it will ever be the fashion to remove them. When we consider that the quantity of infectious material in the trunks and their branches is often as great as that in the main bodies of the tonsils, and also the fact that we have frequently been in a position to demonstrate and prove beyond a doubt the high degree of infectiousness of the necrotic material enclosed within the crypts of diseased trunks and branches, by the yielding of pronounced and persistent symptoms to the removal of such tissues, many months, even years, after the faucial tonsils had been perfectly enucleated, it is a safe assumption that when this subject is fully understood there will be no doubt of the advisability of eradicating the structures under consideration.

As a by-product of the experimental work of which this study is a part, it may

be of interest to record the observation that it requires long and patient testing to determine the infectious relationships which exist between diseased mouths and throats and the systemic diseases whose causes are still in question. And we know of no more accurate method of detecting such relationships than that which we have carried into practice for years by means of curettage. The following sketchy story will serve to illustrate our meaning:

Eight months ago we began a test by curettage of the tongue and tonsils of a woman twenty-seven years of age, to determine if possible whether those infected structures were responsible for a hard goiter which was beginning to embarrass respiration. We were encouraged to make the test in this case by the almost magical effect of curettage of diseased tongues upon simple goiters in young subjects which had not been affected by the removal of extensively diseased tonsils. In this case the goiter had existed for sixteen years. The right lobe of the thyroid was mainly involved. The growth was about the size of a half of a hen's egg, was firm to the touch and was beginning to cause so much embarrassment to respiration by pressure upon the trachea that tracheotomy was believed to be imminent. Tachycardia was the single suggestion of the exophthalmic variety of goiter. The patient was pale, thin and in poor general health. The tonsils were small, contained no pus and but little cheesy detritus. The tongue was deeply "furred," the tufts extending down upon the base as far as they are ever seen. After half a dozen séances of curettage of the tongue and the crypts and pockets of the tonsils and their branches, the thyroid mass was judged to be distinctly softer. The judgment proved to be correct for there was no further embarrassment to respiration. After a dozen séances the mass was evidently still softer and smaller in size. And now after twenty-six séances the enlargement is seen to be reduced to at least a quarter of the size which it presented when the patient first came under our observation. The most rapid tissue changes occurred in the past month, during which the reduction in size

seemed almost like a collapse. The heart's action is now much improved and the patient's health is the best she has enjoyed for years. No better evidence could, perhaps, be adduced to prove that the condition in this case was one of infection from the tongue and throat, but as most of the necrotic material was taken from the tongue that organ would seem to have been mainly responsible. While further proof is needed, our experiences thus far point strongly to the existence of an intimate causal relationship between infected tongues and enlarged thyroid bodies.

This is not the place to dwell at length upon this phase of experimental medicine, but we have briefly sketched the above history in the hope that it will direct attention to a conservative method of exploitation which, when conscientiously applied, will, of necessity, shed further much needed light upon the pressing question of infection-born systemic disorders.

The series of operative tests which resulted in the development of the technic described in this paper, was made possible by the hearty cooperation of Prof. Charles W. Stickle, Director of Oto-Laryngology in the Long Island College Hospital, for whose courtesy in providing suitable subjects for operation and every needed facility for carrying out the tests, we desire to express our warm appreciation. We also wish to thank Dr. George R. Hageman, the then resident surgeon and since assistant in the department, for his keen interest and skilful aid thruout the somewhat protracted search for a solution of this beguiling problem.

150 Joralemon Street.

J. MARION SIMS, THE FATHER OF MODERN GYNECOLOGY.

BY

HENRY CHURCHILL SEMPLE, S. J.
Loyola University, New Orleans, La.

The example of the Father of Modern Gynecology as a devout Christian gentleman should appeal to the souls of his fellow Americans in general, and of his fellow American physicians in particular.



DR. J. MARION SIMS.

"Ubi tres medici, ibi duo athei"—where there are three physicians, there are two atheists." Is that old Latin saw true? It is in Latin, and not in the vernacular, and thus cannot claim to be proved to be "*vox populi, vox Dei*"—the voice of the people, the voice of God." Dr. James J. Walsh, in the pictured pages of his "Makers of Modern Medicine," demonstrates that it is false, at least in the case of discoverers of cures which have not failed. He there sketches the lives of the Father of Pathology, the Inventor of Percussion, the Discoverer of Vaccination, the Founder of Animal Electricity, the Father of Physical Diagnosis, the Father of German Medicine, the Leaders of the Irish School, the Founder of the

To Relieve Vomiting.—For vomiting from any cause, give the compound tincture of iodine, five drops in a teaspoonful of water; repeat in twenty minutes if necessary.

Cell Doctrine, the Father of Preventive Medicine, the Inventor of Intubation, and the Father of Cellular Pathology. This work is not the least readable of that versatile and genial author's many books, all of which are most readable. It places under the reader's eyes the Christian character of those accomplished littérateurs, who were true scientists and who demonstrated by experiment and by observation of facts, theories which have not held science back, but have saved millions of lives, not to speak of billions of dollars.

It so happens that I am a septuagenarian native of Alabama and have noticed the careers of some great physicians who are claimed by my State, and who would not be unworthy of places of honor as devout Christian gentlemen in the promised second volume of Dr. Walsh's "Makers of Medicine."

Thus the late Surgeon-General, Dr. William Crawford Gorgas, was a native of Mobile and a grandson of Governor John Gayle of Alabama. One of his monuments is the Panama Canal, which was made possible by his scientific sanitation, applying the demonstration of Dr. Walter Reed of Virginia, that yellow fever is conveyed by a special kind of mosquito. The aid of General Gorgas as an expert in sanitation, was generously given to many nations. In life and in death, he was a devout Episcopalian, and he had a loving admiration for the Catholic religion. He had a special understanding of charity in things great and little.

The late Dr. Thomas Addis Emmet had a world-wide fame as a gynecologist. He was eminent also as a writer on Irish and American history. He succeeded Dr. Sims as chief surgeon of the great New York Woman's Hospital. He was indebted to

his queenly wife for his appointment as the assistant of Dr. Sims in that recently founded institution, and for this opening to his long and brilliant career as a gynecologist. The beautiful and charming little Kate Duncan had been one of Dr. Sims' closest friends in Montgomery, Alabama. Dr. Emmet submitted to my revision the story of his own conversion to the Catholic faith. He accepted every one of my very few corrections on points which touched on Catholic theology. He had the humble simplicity of the true scientist. He had known me from my infancy. I had the sweet privilege of being with him frequently, during the last years of his long life. His faith and piety were like those of his angelic wife.

I had not the honor of a personal acquaintance with Dr. J. Marion Sims, but from my earliest years I knew many of his friends and relatives. Lately I have had a special reason to peruse his autobiography and letters, which I would like to help to make better known, because in many parts they are touchingly eloquent on God and his His wise and kindly providence, and on the Christian virtues of faith, humility, courage and charity.

J. Marion Sims was born in 1813 and died in 1883. He first saw the light in South Carolina, in Lancaster District, which glories in having given birth also to Andrew Jackson, there known as "Old Hickory." After Sherman's devastating march thru Lancaster, Dr. Sims founded there a home for his destitute fellow Lancastrians. His family claim to share the blood of Rob Roy Macgregor. Sherrod Sims, a Virginian of English descent, the doctor's paternal grandfather, was with George Washington at Braddock's defeat, and served thru the

Revolutionary War, and died of old age, at the age of ninety-five in 1825.

The doctor's maternal grandfather, Charles Mackey, was of Scotch-Irish descent. He was the leader of the Whigs of Lancaster in the Revolutionary War. He was captured by General Tarleton, and, refusing to take the oath of allegiance to George III, was sentenced to be hung as a spy, and was saved from this fate only by the tears and entreaties of his pregnant wife hanging to the general's stirrup. The doctor's own father was a colonel in the War of 1812.

The doctor was a private soldier in a brief campaign against the Creeks in Alabama in 1836, after a bloody massacre from which he had had a narrow escape. While practicing medicine near Montgomery in 1835-1840, at the villages of Mount Meigs and Cubahatchie, he went on his daily sick calls over Indian trails on horseback with his shotgun on his shoulder and his hunting-dog trotting by his side, and usually brought home enough game for the supper of his family. From his ancestry and training his singular courage was second nature. Dr. Thomas A. Emmet who assisted in many of his operations, often spoke of his alertness to do just the right thing, just at the right time, in emergencies which arose much oftener before the days of modern anesthetics.

After a trying but supremely successful operation by Dr. Sims before a galaxy of Parisian surgeons, the great Dr. Civiale said to him:

"I beg to render my homage to you. You are a true surgeon. Such gentleness and firmness, such judgment and courage, I have never before seen combined in such exact proportions in any one man."

In a letter to his wife about this same

operation, he wrote with modesty and humility:

"Dr. Emmet always gives me great credit for foresight, skill, etc., but he says, added to this, I am the luckiest man in the world. He will see that my luck did not desert me in this case, but it was luck based on the intelligence, kindness, coolness, courage, judgment and perseverance of four of the bravest men I ever saw—to them is due the credit of saving her, and to them let the credit be given. But let us not forget to thank God for her restoration, and to bless Him for this great deliverance."

As a student in the country schools, and in college at Columbia, S. C., and in the medical colleges of Charleston and Philadelphia, Marion said he was never above the middle. After receiving his A. B., he decided to study medicine merely because he felt unfit to be a minister or a lawyer. His first two patients in his home village died. He threw his doctor's big tin sign into a well in the back yard and fled to Mount Meigs in Alabama. There, one day, against the advice of the older physicians, he performed a surgical operation and saved a man's life. This inspired confidence into his neighbors and himself. He soon acquired a practice of three thousand dollars a year and became universally trusted and beloved. On account of ill health he removed to Montgomery. There he laid aside guns and hunting dogs, and devoted himself to study and observation, and opened a small private hospital for surgery. It was there that after many failures, he finally succeeded in operating for vesico-vaginal fistula, which before had been regarded as incurable, and that he invented many surgical instruments which he never patented but generously donated to science and humanity. After the death of Dr. Sims in 1883, Dr. Emmet declared that no one had

improved on them, and he said of "Sims' speculum":

"From the beginning of time to the present, I believe that the human race has not been benefited to the same extent, and within a like period, by the introduction of any other surgical instrument."

While in Montgomery, he successfully operated on numerous cases of cross-eyes and hare-lip and he discovered a method of curing lock-jaw of infants. This discovery was published then in a medical journal, and was fully vindicated by hundreds of cases collated thirty years afterwards by Dr. Hartigan of Washington, D. C., who gave full credit to the genius of Dr. Sims as its first discoverer.

His autobiography and letters are in a sprightly style which seems nature itself, and is much like that of Benjamin Franklin. In all his early life the one thing for which he thought himself most unfitted, was writing. At Charleston, he had been elected valedictorian by his class, and had refused that honor as one which it would be absurd for him to accept. At Columbia he had been told that he had to give in two essays without which he could not receive his degree of A. B., and he had decided to give up graduating, until a fellow-student handed in two papers to which he forged the signature of his chum Marion. One day, Dr. Harris of Baltimore, the founder of the Baltimore College of Dental Surgery, the first of this kind in the country and in the world, observed on Dr. Sims' mantelpiece a plaster cast made by a Montgomery dentist for a lady cured of hare-lip. Dr. Harris said: "I would like for you to write an account of this case for my *Journal of Dental Surgery*." Dr. Sims replied: "Doctor, I can't write anything. I never wrote anything in my life; I would be

ashamed to see anything of mine in print. *I keep notes of all my cases*, but I cannot write." Dr. Harris insisted: "Write as you would talk it, or as you have now told it. I will risk it." There was in Montgomery a Dr. Ames, who was a prolific writer, and who was specially admired and feared. One day, to the terror of Dr. Sims, Dr. Ames lit on that article secreted behind old medical tomes. He said:

"How labored is my style! What would I not give if I could write naturally and simply like you! Now, you have got to give to medical journals similar descriptions of your methods and instruments and discoveries. Trust me for any revision that may be needed."

In 1877 Dr. Sims revisited Montgomery, and was received as a conquering hero, which he was. He was addressed by Dr. William O. Baldwin. In his reply Dr. Sims said in part:

"Forty-two years ago I left my native State, South Carolina, to seek a home in Alabama. I intended going to Marengo County, but circumstances conspired to arrest my progress. The head and front of this conspiracy was Dr. Charles S. Lucas, who is with us this evening. When my octogenarian friend heard I was here he mounted his horse and rode fifteen miles to see me. We met, and our tears were mingled for *auld lang syne* . . . You claim me as an Alabamian, and rightly, too, for all that I am, I owe to Montgomery, and to the people of Montgomery.

"I am frank to acknowledge my allegiance, and can do it without treason to my native State. When I came among you, I was young, inexperienced and in bad health. You were to me good Samaritans. Your Crommelins and your Pollards gave me houses to live in till I could procure one for myself. Your merchants gave me credit for food and raiment for my family, when I had not a dollar in the world to pay for them. And no young man was ever treated more kindly by his seniors in the profession. How, then, could I ever be otherwise than

grateful and loyal to those who were my friends, when I most needed friends?"

In January, 1852, he published in the *American Journal of Medical Science* his famous paper on "Sims' Operation for Vesico-Vaginal Fistula."

In 1853, with the advice of his wife, whose judgment he always followed and whose rose-bud given in her girlhood, he religiously preserved as a sacred treasure for over fifty years, he removed to New York City. Long ill health had reduced his weight to less than ninety pounds, and the Croton Water had been observed to restore his strength.

After many sore trials, he finally gained a hearing from leading New York surgeons and ladies, and from the city and state authorities, and he founded the great New York Woman's Hospital, the first in the world exclusively for women. In 1866 he published at London his book, entitled, "Clinical Notes on Uterine Surgery," which soon appeared also in French and German. Before it, there was not a professorship of gynecology, worthy of that name, connected with any of our medical schools, and now we have professorships of this department in every medical school in this country, and, indeed, throughout the civilized world.

In 1861 he first visited Europe. His arrival was everywhere heralded by encomiums of praise for his valuable discoveries and surgical skill, and he received from the profession in all the large cities and hospitals of Europe such a welcome as has rarely or never been given to a medical man. He was pressed to operate in many of the leading hospitals, and by surgeons who themselves enjoyed world-wide reputations.

Dublin, London, Paris and Brussels were each in turn the theater of his signal

triumphs. He operated in nine different hospitals in London, and perhaps a greater number in Paris. His successes were so noted and brilliant that he speedily received decoration from the Governments of France, Italy, Germany, Spain, Portugal and Belgium as a benefactor of the human race.

Having returned to America in 1862, after a brief stay at his home, he revisited Europe, but with the intention of returning to his practice in New York which had grown to be large, responsible and remunerative. But as soon as it was known that Dr. Sims was again in Paris, patients flocked to him in such numbers from all parts of the world as to fully occupy his time, and rendered it next to impossible for him to refuse treatment, and it was not until 1868 that he again returned to New York and resumed his practice, his family remaining in London. He spent the summer of 1863 in Baden-Baden in a ready-furnished château which had never before been occupied by any but royalty. He was the physician of the Duchess of Hamilton, Princess Mary of Baden, a cousin of Napoleon III. He afterwards spent a fortnight in the palace of St. Cloud with that Princess and Napoleon and the Empress Eugenie whose health he supervised. He happened to be in France in 1870 and took charge of the Anglo-American Ambulance Corps and of a great hospital near Sedan, which treated more than a thousand Prussians and even a greater number of Frenchmen. He attended Marshal McMahon as he was borne wounded from the field of battle, and received from that great gentleman a thousand francs for his patients.

In December, 1854, Dr. Sims was beginning to see his way to success in New York City. His wife was still in Montgomery, but his children were with him, and he was

so poor that he could neither put in their stockings any Christmas presents, nor purchase a new coat for his New Year's calls on the great ladies who were to help his cause. He then wrote:

"I feel that a clear head and a good heart are much better than fine linen and fine clothes. It's good to be poor, provided that poverty does not oppress and wholly crush us out. I am just poor enough to be stimulated to extraordinary efforts; yet I feel that if I were a little more distressed I could hardly bear it.

"God in His mercy has, in my case, most assuredly tempered the wind to the shorn lamb. Am I not peculiarly blessed? Does not the light shine in on our darkened path as we never dreamed of seeing it? Is not the finger of God visible in all our afflictions? Is He not blessing us more than we deserve? Oh, what a glorious thing it is to feel, to know, to realize that you are a blessed instrument in the hands of God for the accomplishment of good! When I pause to consider what I have done here, and how it has been effected, I cannot but acknowledge that an overruling Providence has wisely directed all things for the best!"

He wrote to her on February 22:

"Have made visits tonight to Governor Raymond, Mr. Benedict, Dr. Wilkes, Dr. Francis, Dr. Mott, and Dr. Hosack, and with the four last named have been maturing our plans of operation. It seems that Providence has given me power over the very men that are absolutely indispensable to the success of our great scheme."

In letters to his wife from Paris, he tells of an earnest prayer to God for His immediate help in the midst of an operation in which the patient appeared to have died, but which became a brilliant success. After his many triumphs there, he wrote to her:

"While I feel a secret unexpressed gratification at the extraordinary results of my visit here, which would not have been made but for your persistent entreaties, let us not forget the great Author of it all. I have done nothing, but I have been led along, I know not how, and have followed

blindly, confidently and patiently.. Nothing has been done just as I would have had it, but all has turned out better than I could have devised."

Humility and not philosophical, but Christian humility, based on distinct knowledge of dependence on the Creator and Redeemer, was one of the most striking features of this magnanimous man who cared only for truly great deeds of virtue which are worthy of great honor from God and from the good and wise among men.

While slowly recuperating from a wasting spell of fever he wrote to his future wife:

"Once while so sick, I thought I was going to die. When in health I have always been of the opinion that I could face death without any dread, but there is a grand difference between one's feelings while blessed with a strong and healthy constitution, and when the body is emaciated, worn down by disease, and covered with a cold and clammy perspiration, with a mind correspondingly prostrated. Then is the time that death appears in all its terror to the mind of him that feels conscious that his course of life has not been in consistence with all the just principles of moral and religious rectitude."

He thus preached the need of Christian humility to his own father:

"It is strange how often I have been raised up when it seemed impossible for me to live; and yet not strange when I see the finger of God directing so plainly a destiny which I pray may be profitable to others on earth, and profitable to me in eternity. These afflictions are necessary to my spiritual welfare, they are necessary to my usefulness here, and are not the result of mere accident. I know full well that I have a mission to fulfil—one to which my life is most willingly devoted—but which should not interfere with looking forward to a purer existence hereafter.

"You and I, my dear father, have been very bad men, considering we were almost faultless in all the duties and relations of life. We have been mere *moralists*. We thought ourselves as good as anybody, and far better than most people. We never

dreamed of our own sinfulness and utter unworthiness. Instead of looking to a Saviour for help, we have felt in our own hearts a plea of self-righteousness, which makes us occupy a more dangerous ground than the out-breaking sinner. Because it is hard for us who are good moralists to see our depravity, while the blasphemer and law-breaker may all at once be perfectly overwhelmed at the contemplation of the enormity of his transgression.

"When we occupy such a dangerous position, one so securely fortified, how are we to be brought to terms? Nothing but the strongest artillery will do any good—small arms are of no use. They are only scorned, laughed at. It requires long guns of the largest size.

"Our lives, my dear father, have been very similar. Our successes and contented lot in our early life and our *moral* sort of religion were alike. Our reverses of fortune and our afflictions have been similar, occurring about the same period of our career. But I see the finger of God in all, and I feel that it was absolutely necessary for me to have passed thru precisely what I have, to make me what I am. One blow less would hardly have produced the desired effect. You were a good moral man, fulfilling admirably all the duties of life. As a son, husband, father, master, private citizen or public officer, you were faultless. You felt it, and in your heart you told your Heavenly Father so. You rested your claims to a better world hereafter on your good deeds here. You felt not the need of a Saviour (I judge, of course, from your past life, and by looking into my own heart), for they who feel the need of a physician call out for help. God prospered you. But did all this bring you nigher to the good Giver of all these good gifts? Did you feel that they came from Him? Did you feel that in yourself you were unworthy, that you cannot come directly to Him pleading your own good works, and that you must approach Him thru a Mediator and feel your need of a Saviour?

"I cannot recall any evidence of this during the time of prosperity. God wanted to bring the heart of so good a man as you nearer to Him. Intrenched as you were on the great hill of morality, he could not do it by any very gentle means. Having tried all other means, the heaviest artillery of

heaven was opened upon you. The death of a beautiful boy, ten years old, was the first Absalom! How it wrung your heart! Scarcely less than did the death of Absalom, the brat of poor old David! Was this all? Oh, no. Would to God it had been enough! The batteries were opened, and nothing but an unconditional surrender would be sufficient. What next? A few unimportant reverses, a few disappointments in men, much anxiety about worldly affairs, defeat, annoyances, all in quick succession, and then came the great and fatal blow—the death of my mother!"

In a letter dated New York, December 31, 1854, in a similar eloquent letter he preaches the necessity of humility and of a public profession of Christian faith and religion to his wife:

"It is near midnight, and the old year is flickering out. Ah! what saddening thoughts are associated with the death even of time! The birth of the New Year brings with it bright hopes, the realization of which depends more upon ourselves than we are apt to imagine. While we regret the misspent time of the Old Year, let us resolve to profit by past experience, and improve every moment of the new. We will soon be old. What we do in this life must be done quickly. Look back. Eighteen years we have been one Have we not much to be thankful for? Have we been really sufficiently so? Have we done our duty to our children, to ourselves, to our God? We have not. We have well and faithfully fulfilled all the other relations of life, but the moral culture of our children we have neglected, our own religious promptings we have smothered, and the whisperings, nay, the loud calls of the Holy Spirit we have slighted. Do we not then stand self-condemned? What then is to be done? Repent and give our hearts to God. Let us try and do this and we shall feel ourselves in the line of duty. Why hesitate? Why wait a moment? The public profession of the religion which I know glows in your heart, is all that is needed. The power of your example will do more for the moral elevation and religious culture of the rest of us, than whole volumes of sermons. Your whole life is a sermon. Why then

not preach it? Your heart is full of religion. Why then not openly declare it? If you do not take the first step forward, then we shall remain in darkness and doubt."

She in turn had often preached to him that their reverses and afflictions were all for the best when they seemed for the worst. And after reflection, his answer would be: "Yes, they are for the best if from them we learn to be humble." His charity was as striking as his humility. He died leaving only a competence instead of an immense fortune from the huge fees which he received especially from the European nobility. No woman ever mistrusted him. He wrote to his wife about his many visits to the great of New York in order to enlist their aid for the founding of the Woman's Hospital.

"You know how I hate mere idle compliants, bowing and bobbing out; I would not go at all, but I may have a chance to drop a good word somewhere for the advancement of the *cause*, the cause of poor suffering woman. This is at the bottom of my breast, it is at the top of my throat, it fills my brain. It is the grand moral object of my professional life. . . . Next to you and my children stands in my affection the success

of this glorious mission. When I look into my heart I do not see that my motives are at all selfish. The only selfishness that I feel is the desire to do good, to be a benefactor of my race, and I sincerely pray that my labors may be blessed, so far as they tend to relieve suffering humanity, to advance the cause of science, and to elevate the condition of the medical profession. You can understand me. The world may not. It is a glorious thing to feel that you are above the dross and glitter of mere pageantry. Money is trash and may be blown away by the wind. Honors are evanescent, and may be snatched by another. Even reputation may be tarnished by the slanderous tongue of an envious villain. But the proud consciousness of rectitude, coupled with true benevolence, lives in the heart of its possessor, and is as immortal as the soul itself."

These words of Sims remind us of the epitaph of Louis Pasteur: "Here lies Pasteur. Happy the man who bears within him a divinity, an ideal of beauty, and obeys it, an ideal of art, an ideal of country, an ideal of the virtues of the Gospel." Just below these words in Pasteur's address on Littré, are also the following: "These are the living fountains of great thoughts and great actions. Everything grows clear in reflections from the Infinite."



"HERE'S TO HIM."

*Here's to the man whose hand
Is firm when he clasps your own—
Like a grasp of steel
That makes you feel
You're not in the world alone.*

*Here's to the man whose laugh
Puts the somber clouds to rout—
The man who's fair
And kind and square
To the one that's down and out.*

—The Milwaukee Sentinel.

DEFECTIVE WILL AS THE CAUSE OF DEMENTIA PRÆCOX.

BY

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Psychotherapy and hypnotism have received consideration long before the Christian era, and later Hippocrates, Aristotle and Galen recognized the influence of the mind on the body. Hippocrates even went further and wrote of the value of dreams and their analysis in the understanding of mental life. It is impressed upon us, then, that psychotherapy and psychoanalysis are not conceptions entirely of our time and, as we understand them better, the reason for their early recognition is as clear to us as the reason for the recognition of life itself; higher mental life cannot exist without them.

Perhaps more credit is due Sigmund Freud for his interpretation of the unconscious than to any other man of modern times, and we must not deny the weight of his wonderful, tho at times obscure, deductions nor the enormous advancement his theories have found on modern psychology.

According to Freud, every human act, however trivial or accidental it may seem, is the expression of a meaning which is also a wish, and where no wish is in evidence, it is the expression of an unconscious desire; a slip of the tongue, or pen, a misplaced article, a forgotten name, all mean that the unconscious, or real self, has wished it so, and that, too, the conscious self may be ignorant of the desire. He ignores the explanation of the physiologist that such mistakes may be due to fatigue, excitement, absent-mindedness, or sickness, but acknowledges that such physiologic factors may aid in promoting the cause.

Freud divides the mind into three parts, the *unconscious*, *foreconscious*, and *conscious*. In the unconscious is stored all mental impressions, good, bad and indifferent. He compares it to a large room in which all mental impulses or impressions are congregated, with some seeking exit to a smaller room or parlor, which is consciousness. But on the threshold, a sort of hallway between these two rooms, there stands a guardian or watchman that inspects all individuals' psychic impulses and will not allow them to pass unless they meet with his approval. This censor is what might be termed a secretary to the ego, to protect it against the unpleasant or immoral. Some impulses escape his watchful eye and slip past into consciousness, but are discovered and sent back to the general reception room. It may be that they did not remain long enough in the "parlor" to attract the attention of consciousness. Thus one may see that repressed emotions are not always brought to consciousness; the censor has acted so smoothly and quickly that their presence was not detected. These impulses which are turned back are known to us as "suppressed emotions."

When the censor is off guard, as in sleep or the hypnotic state, these suppressed emotions exhibit themselves to us in the form of dreams. Sometimes these dreams are so distorted as to bear no resemblance to the desire they represent; the disguise has been assumed to fool the censor and get past him. Freud does not say so, but it is logical to suppose, if he is right in his psychology, that these disguised or symbolic dreams are usually from impressions that have been long repressed and often sent back or suppressed by the censor. They probably belong to early life when

the ego is sensitive in its development and rejects many impulses which at that period are little understood and perhaps feared. When this is understood one does not wonder at the grotesque exhibition of dreams. To invent symbols, however, to represent certain desires in dreamlife, as Freud has done, does not appeal as logical, but may have been used by him to force an exit from a position on dream interpretation that his own deductions had rendered untenable. That dreams disguise themselves is reasonable, but that they have a wardrobe from which the same selection is always made by the same impulse that wishes to make a "get-away" is not supported by the same analytical reasoning that admits their vagaries.

The analysis of dreams is not made with mathematical precision by the employment of certain symbols that always have the same meaning to all individuals; that would deny the complexity of our lives, and he who says that any two of us are alike is very much mistaken. Yet dreams do have a meaning and, if we acknowledge them as originating in the unconscious where from birth to death every impression receives shelter, we can see why they must have a meaning, but that meaning can only be discovered thru subtleness and skill.

Dreams, we know, are of extremely short duration, that is, an apparently long, drawn-out dream where the dreamer travels miles, holds lengthy conversations, and performs almost supernatural stunts, takes only a few seconds of actual time. The period from the time the stimulus that starts the dream is applied until the dream ends is extremely short. This explains in part the grotesque nature of dreams—they have not time to become organized. The stimulus, which may be noise, cold, heat, indigestion, body

discomfort or what not, is carried past the dozing conscious self and will to the unconscious. There all kinds of impressions may be called up that present themselves without regard for judicial association, that is, in the waking state the thought of a horse would, by association, call forth from the unconscious many impressions that have been stored away there by past experiences. The man raised on a farm would have quite a different association of ideas about a horse than would the city-bred man. Even a greater distinction would be found in an Eskimo, who, except by hearsay, has no knowledge of a horse at all. The farmer's conscious and directed association might be of a brush and curry-comb, single and double harness, wagons, plows, hay rakes, hay, oats, straw, horseshoes, blacksmiths—an almost endless number of by-paths leading away from the subject with which he has had such vast experience. In sleep, however, when consciousness and will are off guard, these past impressions may be improperly arranged and may also be contaminated, or confused, with other impressions that bear no relationship to a horse. The threshold of the unconscious is open and exhibits its conglomerate without any semblance of order or proper association with the star actor of the dream. The horse may be wearing a wreath of pink apple blossoms, have no feet or legs, yet be dancing on a frog pond to the tune of *Annie Laurie*. We awaken to wonder at its absurdity, yet, when we know that it is but a picture of life impressions crowding out without choice or selection by the conscious mind, the phenomenon is better understood, and not so very strange after all. Of course, the Eskimo who had never seen or even heard of a horse could not dream of one. Dreams must be limited to what we know

or, by association of ideas, to what may be imagined. Dreams, then, are not only instinctive impulses that edge past the sleeping will to gain expression, but are flash-lights of the unconscious where different impressions are caught as they float into focus and are not "sitting for a picture." It is like dropping unexpectedly into a large and unorganized family a half hour before breakfast.

Suppose, for instance, you had a dream that reoccurred quite persistently; you were in a sail boat on a lake at dark; the water was black and heavy, oily; the sails hung limp in the still air; you were not getting anywhere, you were lost—alone. According to Freud's method of analysis the gaunt standing spars, the hanging sails, the quiet body of water would each be a symbol representing certain anatomical parts of the human, and he would build on this "hit or miss" foundation more or less of a "hit or miss" structure. If the dreamer accepts it, the chances are that he or she is still in the sleeping or analogous, hypnotic state. As a matter of fact, this dream was told by a young woman who had been suffering from nervousness for many months, and all efforts at relief had been unavailing. Her physical disabilities, other than those resulting from restlessness and worry, were negligible. She was asked what church she attended and replied that she had never gone to church, that she wanted to, but could not make up her mind. Her father, whom she had admired greatly, but who was dead, had been an agnostic. She had a little boy four years old and for his sake she felt the need of religious direction. The probability of the dream being an expression of those desires was explained to her—the ship without motion or direction, the darkness, the loneliness. Anyway, she was

glad to accept the advice to become affiliated with some church; this particular dream did not recur, the nervous symptoms disappeared—she was well. This dream is well organized and the associations clear. That it should be so can be more readily understood when one knows that the childhood and youth of this woman were spent in a small fishing village. Often had such a picture been presented to her and, when her father was delayed at his nets, anxiety impressed it more deeply upon her mind. It is natural, then, that it should be recalled in dreams to represent, in later life, the same desolate feelings.

By eliminating the censor, the individual is then divided by Freud into the conscious and unconscious selves, that play the parts respectively of Dr. Jekyl and Mr. Hyde. Each of us carries a demon of vileness and indecency whose presence our more respectable selves wholly fail to suspect. Of the two, it seems that the unconscious self is the more clever and persistent. It delights in imposing upon the innocence of the conscious self and committing it to embarrassing slips of the tongue, betraying an obscene and malevolent preoccupation, and in poetry and dreams it expresses gross inclinations under apparently innocent imagery. The function of the conscious self is merely to reflect, weigh and wonder at the wishes of the unconscious self; yet strangely it also exercises censorship and control over the unconscious self, and this control sometimes results in the repression of a desire, so there is a conflict between the two, and this disagreement results in the exhibition of nervous symptoms. By psychoanalysis the desires of the unconscious are explained to the conscious, an understanding takes place, and the conflict ceases. Gratification of the desire may be

plausible and right or entirely wrong. In the first case, the course to pursue is clear; in the second case, the wrong desire or impulse must be sublimated, that is, directed in better channels of endeavor. Here let us say that this must be done, too, with the approval and assistance of the censor, for from what has been said, the censor, watchman or guardian of our conscious or directing and ethical selves, must be the *will*; what it "wills" passes, and what it "wills" is rejected. Therefore, it must be thru the strength and character of the will that higher psychic life is sustained and developed. Such an hypothesis gives us a reasonable explanation of many mental afflictions, especially dementia *præcox*, which usually occurs during adolescence. They come to us in a clearer light and consequently are more amenable to rational treatment.

Since the censor or watchman is the will, and stands guard over all the instinctive impulses and acquired impressions in the unconscious, it stands to reason that were it to free its prisoners without restriction or direction as indicated by sublimation, it would come to be that the pleasant but harmful desires would form the habit of taking "French leave." As this is repeated the will shows less resistance to each onslaught, loses prestige with its hostages, and confidence in itself. They take advantage of this and in time give the will little thought or consideration, trample him under foot as if he did not exist, and flood the conscious with their conglomerate; thus the ego as we know it, an intelligent, ethical human being, is lost and expresses itself only in terms of the unconscious—the animal, or purely instinctive self.

Since it may be admitted with a fair degree of accuracy that the lower type of

African negro or the South American Indian does not differ fundamentally in his instinctive impulses to serve the ego from the higher type of civilized man, the difference, then, must be one of education and acquired habits. When this fact is accepted the enormous importance of education and training shows itself in truer values, and we recognize character and morals as largely depending upon the reaction of the individuals to his social environment. This applies to us as a nation, a community, or an individual.

Suppose when you were a youngster you had to get out of a warm bed, dress in a cold room, go down and build the kitchen fire, carry in the wood for the day, have breakfast and walk a couple of miles to school, take a lunch that was set up to sustain rather than to please the palate, pay strict attention to the three R's, go home after school to do some small chores, get the kindling for the morning fire, have supper, study, and go to bed. On the other hand, say, you are called to get up for breakfast and ready for school. The bed is comfortable, the room warm and cozy, sleep is inviting and acceptable. You doze along. Mother calls again, but to you it is a kind of a dream. She comes to ask if you are feeling well and of course in that state of mind you are not. Eventually you may be aroused and removed from your comfort in time to eat an especially prepared breakfast for which you are not keen. You may arrive at school on time or late; to you it doesn't make much difference as you don't like it anyway. You loll thru some weary hours to go home fagged out and disgusted. You are cross and irritable; even play does not mean much to you—it's the same old thing—too common. In the evening study is irksome, and you don't

like the subject so you coax mother to let you go to a movie—that there is one picture you just must see. You are told that you must study, but you don't and look so unhappy and miserable that the parent decides that your mind is not on your work and you might just as well go as "children are children only once." This proceeds from day to day, ever becoming more complicated with more conditions to meet that are avoided, and more desires arising that are gratified. It is true that we are children only once, so this comparison must impress you. You would not take long in choosing the one to whom you would appeal where character, decision and strength of will are to count. Yet some of us would blame the man for what he is. "Be wise in the choice of your parents" does not apply only to inherited qualities. The parents and children of today are handicapped by a too attractive environment.

It is our contention that dementia *præcox* is, broadly speaking, a disease of the will. The will has been so often overrun by instinctive impulses (especially the sex impulse) that its function as an efficient guard of higher psychic life is lost. It hardly exists and the ego, as we have stated, is dominated by those instinctive impulses which crowd out from the unconscious.

A properly adjusted life would be one in which there is cooperation and sympathetic understanding between the conscious and unconscious selves, where the censor, guardian or will is strong, just and alert and stands between them as a truly mutual friend. For it is the duty of the will to guard the unconscious from harmful impressions that would reach it thru the conscious, just as much as it is to protect the conscious mind from the strong instinctive impulses that would force their way from

the unconscious. We cannot deny that, if we will it to be so, certain impressions are accepted by us that are not good to be

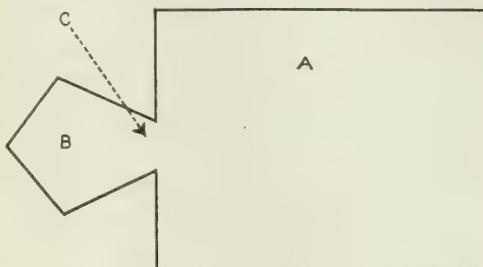


FIG. 1. A, Unconscious; B, Conscious; C, Will.

(1) SLEEP—In sleep B and C become inactive—go off duty and leave the body to the control of A. Impressions of A may slip past C into B during sleep. These slippery impressions, or emotions, are dreams. Dreams may also be the result of a stimulus that is not sufficiently strong to arouse B and C, but enters A and calls forth a flood of impressions that are not always well associated. In this case, the dream picture will depend upon the nature of the stimulus, the emotional state of the individual before sleep, the complexity of the ego, and the impressions that happen to be on the surface at the time of exposure.

(2) HYPNOTISM—In hypnotism the proposition to be hypnotized is made to B by the operator (some other individual). B considers it and takes the matter up with C; if they agree, both relax in their duties and await the command of the operator that "You are going to sleep." When B is asleep, C, located in B, is also affected and becomes lax in his duties, depending upon the degree of sleep. Consequently, the suggestions by the operator that follow pass direct, without interference from the Conscious or Will, to the Unconscious A, and receive the same response as if they had originated in B, but lack the judicious control of B.

(3) AUTOSUGGESTION—In autosuggestion, B and C do not eliminate themselves. B conceives and proposes to C that they should force some impression upon A, the Unconscious. They (B and C) endeavor to eliminate other impressions and concentrate on one—the one they wish to "put over."

(4) PSYCHOANALYSIS—Psychoanalysis is an endeavor to understand the wishes of A, by B, that may have forced their way into B, in the form of dreams or impulses. It is an effort at harmony between A and B where C exhibits himself as just and competent.

stored away in the unconscious. The old illustration with which everyone is familiar—meet someone who tells you that you look badly (you may be feeling fine); let it be

repeated by several others and the conscious mind accepts the suggestion from force of weight unless the censor, or will, steps in and says to the conscious mind "we cannot allow such a thought to enter the unconscious; it could only create a disturbance, so you had better divert yourself on some other subject." Perhaps the conscious mind obeys, perhaps it does not—that depends upon the way it has been "brought up" or educated.

If you were so bent on beating an opponent, say at golf, that you would stoop to satanic finesse, try the following: Have someone, in whom he has confidence, tell him to be sure to "keep his eye on the ball," "not to forget to hold his head down," "to swing thru," or any one of the many directions that may be given in the game. After it has been thoroly impressed upon him that he keep in mind to do only the right things you start with the devilish finishing touches, wait until he gets into trouble then say, "Gosh! that's rotten luck. I hope you will be able to get out of it." When he dubs a shot remark that he surely is off his game. Unless he is a finished golfer whose confidence cannot be assailed his game will be rotten. He may develop a destructive mania; feel like breaking clubs he has had for years, cuss the course, day, caddie and himself and decide he is thru with the game for life. After a shower and lunch he may cool down and analyze his play. Nine times out of ten he comes to no other conclusion than that he has been committing some golfing fault, or suffering from a physical disability. As a matter of fact, he has had against him two of the greatest factors to the performance of any game in which muscular movements are involved. The directions that he watch carefully his "form," if followed, would convert his unconscious

muscular movements into conscious acts. We know that if we give attention to muscular movements usually performed automatically they lose grace, accuracy and vigor. So, by the very effort to do the correct thing, he became awkward, inaccurate and lost distance. An approach to the mind, that is usually acceptable, comes thru such an emotion as sympathy. When you say he is having hard luck, or must be off his game, the idea is accepted because it comes in a friendly garb and is not given the severe scrutiny that a stranger or acknowledged antagonist would receive. Thus the idea of ill luck and bad form are allowed access to the unconscious and predominate during the game against all the efforts of the will and consciousness to fight it. This conflict adds more chaos to the already disturbed mind.

In sleep, drug narcosis (including alcohol) and hypnotism the censor or will is bribed, tricked or drugged until it becomes lax in its duties, and with its protégé the conscious mind leaves the body to the machinations of the unconscious. We have come to look upon the unconscious as a slovenly bully that can only do one thing well and that is look after the natural functions of the body.

Sleep is a physiologic problem depending upon several causes: 1st, the accumulation of waste products, especially in the brain centers due to physical activity; 2nd, the exhaustion of potential energy in the brain cells during the waking state; 3rd, changes in the blood supply to the brain. The psychologic consideration of sleep is based on one's relation to his surroundings. After the day's contact with different problems when there may have been excitement, worry and what not, there is a desire on

the part of the ego to withdraw from it all—to forget it.

Thru sleep we gain physical and mental rest—recuperation. To insure sleep we seek a comfortable position, assume mental tranquility, and remove all exciting sensory stimuli as noise and light. During sleep consciousness is more or less lost, depending upon the depth of the slumber. It is then that the conscious folds itself up, the watchman, will, dozes on the job and the unconscious may or may not express itself in the form of dreams. We know from experimentation that a stimulus, such as tickling the nose, applied to one while sleeping may start a dream that bears a relation to the stimulus applied, yet not awaken the subject. This is somewhat analogous to hypnotism.

Hypnotism is a state of artificial sleep that is more or less profound and depends upon the acceptance by the conscious mind and will of certain suggestions made to it. These suggestions may come from the outside or be the product of the subject's own mind; in the latter case it is termed autohypnotism, or autosuggestion.

Hypnotism is produced in various ways, but we will not describe them for the psychic processes are of more interest to us than the methods by which they are induced. Here, again, our hypothesis of the psychic construction (unconscious, conscious and will) proves itself to be on a sound foundation.

The first requisite in the subject is that he "be willing" to undergo the experiment. This "willing to" is not decided by the will until the proposition has received more or less consideration by the conscious mind. (You will notice this is an approach entirely opposite from that of dreams, where the appeal to the will is made from the

unconscious.) If the conscious mind has no objection and so states its decision to the will they mutually agree on a respite for *both* from participating in mental activity, and passively await the command that will relieve them from duty. So when the operator makes the statements, "You are growing sleepy," "You are too tired to hold up your head," "You are sound asleep," the conscious mind and will accept the suggestion without criticism and pass into the hypnotic state.

The hypnotic state, then, is one in which the conscious mind and will are at their usual posts but working with decreased efficiency or not at all, depending upon a light or deep degree of sleep. You have, then, operating within the ego only the unconscious mind that never sleeps and to it passes directly the suggestions that, in natural psychic life, filter thru the conscious and pass the will. It accepts these suggestions as part of the ego and acts on them as the past impressions stored away would advise. Therefore one may see the danger that lies in hypnotism. No one human can know and understand all the complex impressions that flood the unconscious of another human. The suggestion, "You are going to be happy," may in one associate itself with a riotous violation of the temperance law; in another arouse a latent unconscious desire that it would be best not to awaken. Yet the suggestion itself is entirely praiseworthy.

Autosuggestion is accompanied by the same method, except that instead of having another do it, you flim-flam your own conscious self and will. But in this case neither the will nor the conscious self go entirely off the stage. It is rather a dignified acquiescence to a little play that the conscious self directs and which the censor or will

allows to be shown to the unconscious for its moral uplift.

Since in both hypnotism and autosuggestion it is necessary to a more or less extent to push the conscious self and will to one side, it can be seen why both are, as a rule, bad practices. The conscious self and the will become less efficient just as they do when pushed aside by the unconscious. This hypothesis explains, too, why the demented or insane cannot be hypnotized. The will and conscious self have already been overpowered by the unconscious and do not exist as individual entities from which authority may be obtained to pass unmolested thru their domains to the unconscious. This metaphor might be applied to such a country as Russia is today. The enormous population with its traditions, great natural wealth and potential energy, represent the unconscious. It cannot be reached for its own good or that of others because the directing and governing mechanisms, conscious self and will, have been pushed aside.

The disturbance of the will has stood out so prominently in all cases of dementia praecox that it has been recognized as a fundamental symptom, and so far as I know has always been considered as such—a result rather than *the cause*.

Let me quote Barker from *Monographic Medicine*, page 634: "Bleuler discusses the question whether or not a physical disease process need be absolutely necessarily presupposed in schizophrenia. Some believe that the whole symptomatology is psychically conditioned and that it can develop on slight deviations from the normal, very much as the tendency to hysterical symptoms is so great in many people that in the ordinary difficulties of life they become hysterical, whereas the average person becomes

hysterical only after extraordinary psychic traumata. The certain pathologic-anatomical findings have been demonstrated, these are attributed by Schott to inactivity-atrophy or by Young to the results of toxins formed during the emotional states. The symptoms or toxic disturbances, are so much like those of the so-called functional neuroses that mild schizophrenic cases are often supposed, for a long time, to be hysterical or neurasthenic. Bleuler values, however, the arguments against schizophrenia being purely a functional process and points out, especially, that the incurability and the insusceptibility to influences as regards the course of most cases are without analogy in purely functional disturbances. Moreover, the disease occurs among savages as well as among cultured peoples. It may be, therefore, that an anatomical or chemical disturbance, which runs a chronic course with acute exacerbations and periods of arrest, causes the primary symptoms (loosening of associations; disposition to hallucinations, to stereotype, etc.) ; but just what the nature of the schizophrenic process is, no one as yet knows."

We admit that inactivity decreases the function of any organ and acknowledge, too, the influence of the emotions on the internal secretions, that the strongest emotions are instinctive and belong almost wholly to the unconscious and that it is the function of the censor, or will, to control these emotions and keep them in place, for only do they predominate when the will is at fault. Therefore, due to loss of will power, there is a decrease in the activity of higher mental processes, and consequently an inactivity-atrophy. Also there is a toxic condition due to emotional states. Both of these conditions (inactivity and

toxicity) result from loss of tone of the will and only by its continued enfeeblement do they continue to exist and promote mental degeneration. We all know how these patients sit and day-dream and how these dreams eventually dominate their lives, exhibiting themselves in the form of illusions, delusions, hallucinations, and morbid impulses. We know, too, that the rational treatment of these cases demands personal attention to reeducation in the matter of correct habits and to do this it is necessary to reestablish and strengthen the will.

All of our attention to the correction of the internal secretions will not improve the condition one whit if psychic hygiene is neglected. Do not travel with the cart before the horse. We need smaller institutions, more physicians, and more trained attendants. It can be attained by having counties, or combinations of smaller counties, look after their own insane. Not only this, such institutions would provide laboratory facilities for the physicians of the community and likewise serve as health centers.

Blood-pressure Increases After Smoking.—After smoking a cigar or three cigarettes, blood-pressure rises and the heart beats faster. This is the finding of Dr. Robert L. Bates, psychologist at Johns Hopkins University, who carried on experiments so that physicians could have real evidence on the dangers of smoking during sickness.

The rise in blood-pressure and heart rate is only as much as might occur normally due to other conditions and both return to normal in from twenty to thirty minutes. Dr. Bates was unable to determine how much of the change was due to the products of smoking tobacco and how much to mental effects, for it is known that emotions and mental processes may also affect pressure and heart rate.

A PRACTICAL PLAN FOR MEDICAL AND DENTAL COOPERATION.

BY

ALFRED ASGIS, D. D. S.,
New York City.

In a recent address on "Focal Infection of Dental Origin" before the New York State Dental Society, Dr. Charles H. Mayo said: "It is more important for the dentist to have a good foundation in medicine and anatomy than for the oculist to have it, because in the mouth will be found evidence of more diseases than in any other region of the body." We will also recall Dr. Mayo's well-known statement, "The next step in preventive medicine must come from the dentists. Will they do it?" It may be answered that attempts have been made by dentists to eradicate mouth infection to the best of their abilities, altho there are some in the dental profession who still adhere to the old practices of reparative rather than preventive dentistry. And as to focal infection, many still maintain their old attitude that until it can be definitely proved that the tooth *is*, and not *may* be, the cause of disease, the whole doctrine of focal infection and elective localization is not to be reckoned with. Dentists feel justified in not extracting dead teeth as long as there are no marked symptoms of disease. How are we, then, to arrive at some plausible, scientific solution of this problem?

The question at issue is not so much "Will they do it?" as it is "Can they" or "Are they qualified to do it?" We know too well that dental education and the clinical experience of the dentist in matters of mouth diseases are insufficient.

Whether we believe that the focal infection theory is a fad or not; whether we believe that dead teeth are a menace to health

or not; whether we believe that preventive dentistry can be made practical or not; we are, nevertheless, agreed that knowledge is the road to progress. The works of Billings, Rosenow, Mayo, Bell, Cotton, Osborne, and many other clinicians and research workers can no longer be ignored. Those who are seriously interested in the progress of dentistry as a healing profession can no longer afford to dabble in pseudo-scientific verbosity, but must get down to the real task of learning the fundamentals laid down by those pioneers in clinical stomatology. The New York Stomatological Society appeals especially to the younger dentists to get together and be prepared to shoulder the added responsibilities of our profession. The St. Louis Study Club, as well as other study clubs thruout the country, have set the example and showed that not thru propaganda or the passing of resolutions, but only thru study can we hope to reach the pinnacle of scientific progress.

It is high time that the young men realize that a new epoch in dentistry has come, and that it is up to this younger element to direct the destiny of our profession. If we are to go ahead, as we are bound to, we must face dental problems intelligently and with open minds and not evade the issues confronting us. We must adopt a scientific attitude, and this can be done only thru knowledge and more knowledge. The New York Stomatological Society has set out to accomplish this task of bringing together the younger members of the profession and providing them with the knowledge needed. These young men often fall prey to certain schools and unscrupulous "specialists" that are ready to abuse the confidence of the men who seek their counsel.

The New York Stomatological Society held its last meeting in May. It has a two-fold aim: first, to give group instruction, clinical and didactic, in the treatment and prevention of oral and dental diseases; secondly, to provide a forum for discussion of practical cases. With the rapid progress of dental and medical science and with the added responsibilities of the dentist, there is an urgent need that practitioners receive post-graduate instruction by competent men. No less important is it to have dentists cooperate with each other by discussing their particular problems. They must also cooperate with physicians, with whom they are bound to come in closer contact. The Society provides a practical medium for cooperation in this wider sense.

Last season clinics were held weekly from January to May. Group instruction was also given in oral prophylaxis, pyorrhea, and office management, subjects of vital interest in everyday practice. Several papers were read on the following topics:

"Group Instruction in Clinical Stomatology—An Immediate Need for the Practicing Dentist," by Alfred Asgis, D. D. S., presented on January 17, 1923.

"Economic Aspects in the Practice of Stomatology," by Joseph C. Ruggier, D. D. S., read on March 7, 1923.

"Clinical Stomatology and Its Place among the Specialists of Medicine," by Alfred Asgis, D. D. S., delivered on June 7, 1923.

The success of last year's program may be attributed to the efforts of John L. Kelly, D. M. D., who has been instrumental in providing interesting clinical cases. Dr. Kelly also conducted the classes in pyorrhea and oral prophylaxis with great benefit to those in attendance. The following officers

were elected for the year 1923-1924: president, Dr. Alfred Asgis; vice-president, Dr. Joseph C. Ruggier; secretary, Dr. Stanley Slocum; treasurer, Rex F. Taylor.

Leading dentists and physicians have been invited to join our staff of instructors. The sympathetic attitude of prominent New York doctors toward our Society is a sign that progressive men of both professions realize the need of extending scientific knowledge to the rank and file of the dental profession. Post-graduate instruction can no longer be considered a luxury, but a necessity, especially for the younger men. Dentistry is at present in a transitory stage, and unless the new members of the profession equip themselves to meet the demands of the time, they will find themselves in a critical situation. Our Society wishes to extend its assistance to all those interested in the progress of dental science and the welfare of our profession.

That the medical profession is ready to assist us and cooperate with us in our endeavors can readily be seen from the following extract taken from a letter sent us by a leading physician of New York which is characteristic of the spirit of our medical confreres:

"I think you are working on a very commendable matter. If you can get doctors and dentists to understand each other so that they can think and speak more clearly on the subject of oral sepsis, both to each other and to the patients, it will be a good, constructive thing. We must eventually cooperate and not just talk about it, so that each one understands his field and obligations."

The New York Stomatological Society is preparing for the coming season an interesting program of Post-graduate Instruc-

tion in Clinical Stomatology. Several clinical courses have already been arranged, as follows:

1. "Dietetics and Its Application to Clinical Stomatology," a course of six lectures with slides and clinical demonstrations. Instructor, Robert H. Rose, M. D.
2. An illustrated lecture on "Reform Diet," by George Huston Bell, M. D., F. A. C. S.
3. "Oral and Dental Radiography." Instructor, Byron C. Darling, M. D.
4. "Pyorrhea and Oral Prophylaxis." Instructor, John M. Kelly, D. M. D.
5. "Full Dentures," arrangements being completed. Instructor, H. E. Tompkins, D. D. S.
6. "Dental Pathology in Relation to Standard Methods of Root Canal Therapy." Arrangements are being made to secure instructors.
7. "Principles and Technic of Oral Surgery." Arrangements are being made to secure instructors.

Membership in the Society is open to all practicing dentists. No fees are charged for instruction as all instructors give their time gratis. Practicing physicians are invited to become associate members to carry out our practical plan of medical and dental cooperation. The Society wishes to express its appreciation and thanks to those socially-spirited professional men who have already shown by deed, in joining our faculty, their willingness to raise the standards of dental practice. The time and place of lectures, clinics, meetings, classes, etc., will be announced later.

For further particulars, the reader may write to the author, or to the secretary, Dr. Stanley Slocum, 597 Fifth Avenue, New York City.

"OSTEOPATHY."

BY

DOUGLAS GRAHAM, M. D.,
Boston, Mass.,

An excellent *masseuse* from a neighboring city called on me a short time ago and said, "The doctors in our town will not recommend massage, and their patients who need it go to the osteopaths." The inevitable result of this is that when their patients are benefited, as they sometimes are, their physicians are denounced for a conservative lot of old fogies, who do not want their patients cured in any other way than by the use of drugs; whereas they might just as well have had the honor and glory of the cure by advising massage at the proper time and seeing that it was correctly done. But many times patients do not ask advice of their physicians about such matters, and when they receive no benefit or are injured, then they come back to the fold of their own good shepherd much better sheep than when they departed. Especially is this the case with many of the patients of the orthopedic surgeons, who often have their spinal columns *yanked* in a most unmerciful manner by the osteopaths, when they ought to be kept quiet, and then they return "meeker than Moses," and require a much more prolonged course of immobilization. Indeed, I am not so sure but that some of my orthopedic friends are highly *tickled* over this, tho they say not a word. But what shall we say of the physician who is so lacking in backbone as to quietly and placidly look on while his patient is being treated by an osteopath? Surely he ought to know that in some cases valuable time is being lost; in others, that his patient is liable to be injured. We are

told everything that the osteopath does is scientific, very scientific. Some even claim that it is nothing but scientific massage. Unfortunately for the patient, it is too often *sigh-entific*. A few illustrative cases may be of interest:

Case I. An elderly lady was brought to my office not long ago with a shoulder that had been deliberately, wilfully and ignorantly sprained four months before by an osteopath who was giving her *scientific* movements for her general health. The osteopath who treated this patient was a member of the firm of the osteopathic college. The patient had the consent and approval of her physician to try osteopathy, tho he knew of an excellent *masseuse* who had often helped him to get patients well. Both he and his patient are now well cured of osteopathy.

Case II. A patient of mine who had recovered to a wonderful extent from hemiplegia, under massage and remedial exercises hearing of the marvelous cures wrought by osteopathy, thought he would like to try it to please his friends. He went to one distinguished osteopath, "who set his bones" for three-quarters of an hour every other day; to another afterward who did the same thing for fifteen minutes every other day. After each *séance* he was so fatigued that when he got home he had to go to bed. After massage and exercises from me he was always refreshed and went away smiling.

Case III. A short time since there was under my care a very intelligent *masseuse* suffering from neurasthenia from over-work. The previous winter one of her patients wished to go to an osteopath. As she was herself suffering from a backache at the time she thought she would be a *John the Baptist* and go and have her back osteopathicized in order to see if it were safe for her patient to go. This *masseuse* has a natural enlargement of one of her sacroiliac articulations, which the osteopath said was out of joint and proceeded to replace it. She was in so much pain immediately after that her physician had to give her a hypodermic of morphia.

Case IV. A boy suffering from pseudo-muscular hypertrophy was brought to me

for consultation. He had been getting along very nicely under gentle massage and passive motion from one of my pupils, when his mother, hearing of the wonders of osteopathy, decided to have it tried on him. At each "set-to" the osteopath proclaimed that he turned over every rib in the boy! He was greatly exhausted after each time and grew rapidly worse.

Cases treated by osteopaths are continually being reported to me by physicians and other friends. A few of these might be of interest:

Case V. A patient suffering from curvature of the spinal column was treated by an osteopath, who attempted to correct the deformity. She has been paralyzed below the curvature ever since.

Case VI. A young woman with a lateral curvature of the spine high up went to an osteopath, who attempted to set the bones, since which she has suffered from paralysis of one arm.

Case VII. A neurasthenic patient wished to be treated osteopathically. The osteopath found what he thought was the cause of her trouble in a supposed dislocation of one of the cervical vertebrae. He turned her head sharply to one side and then gave it a sudden jerk to the other side. Ever since she has been unable to get up and walk on account of dizziness.

Case VIII. A lady fell and slightly injured her hip. A young osteopath who had just graduated pronounced it a dislocation, and at once gave it some "scientific" movements, and "set it" in the presence of a large number of people in the parlor of a hotel. The patient immediately got up and walked, amid the applause of the spectators. A surgeon who had been called arrived rather late on the scene, after the performance was over. He explained to the satisfaction of the assemblage and to the discomfiture of the osteopath the absurdity of the whole procedure. The patient took part in a dance the following evening.

Case IX. A patient suffering from involutional melancholia at the change of life was treated by an osteopath, who professed to have found the cause of her trouble in two abnormal curves of the spinal column

and later to have cured them. Even tho insane, the patient could not believe she had been cured of what she thought must be incurable in her spine because it had been there so long. She grew worse and had to be sent to a hospital for the insane.

Case X. A friend of mine had a patient suffering from pleurodynia. The doctor was obliged to be out of town for a time and the patient sent for an osteopath, who rubbed and pounded and set his bones for an hour, and then gave him electrical treatment. After letting the patient rest for a brief period he repeated the operation. The doctor was sent for in a hurry when he got back, and found his patient black and blue and in a comatose condition.

An osteopath called at one of our State hospitals for the insane and told the superintendent that he could cure every one of his patients by pushing that vertebra back into place that projected too far back at the base of the neck (the seventh cervical).

The superintendent of a hospital for the insane, more credulous than the one just mentioned, told me he knew of a case of cataract that had been cured by an osteopath in Philadelphia. I wrote to a physician there about it, and received the reply that he knew this gentleman well, that his general health had been benefited by the osteopath, but his cataracts remained the same as before.

The city editor of one of our large daily newspapers who, a short time ago, was somewhat captivated by the brilliant reports of osteopathy, told me the other day that it would not take long before they ran themselves out, as they injured so many people. Distinguished lawyers and others similarly situated have said the same to me. But let us give the devils their dues. Among so many of them there must be some naturally good manipulators, gifted with a little common sense, in spite of the

absurd theories and practices that they have been taught, and who cannot fail to benefit the right sort of cases when they come to them, but woe betide the wrong sort of cases.

An argument frequently used by laymen in favor of osteopathy is that it is legalized in many of the states. Did any one ever yet hear of a bogus college that could not get a charter from a state legislature? Within a short distance from here we had the spectacle of a student who had not yet finished his course nor paid his dues in an osteopathic college occupying the position of a full professor in the same institution. A student in a Western osteopathic college, after having studied for fifteen months, was told that if he took five months' practice with one of their regular practitioners he would be allowed to graduate. He complied with their request, but was not allowed to graduate. He then started a college of his own and appointed himself secretary, treasurer, dean, and professor of physiology, and graduated from his own college. Having fulfilled its mission on earth, the college then went out of business. After this he got a bill put thru the legislature for the legalization of osteopathy. Smart fellows these, and the kind that the osteopaths make heroes of!

In Missouri, where these Solons originated, the Supreme Court has decided that osteopaths are not physicians and surgeons under the laws of that State, and if they pretend to treat disease they must be held responsible for their acts. A case came to the Supreme Court from a lower court, where a young girl, thru her guardian, brought suit against one of the leaders of the School of Osteopathy for \$10,000 dam-

ages for malpractice. She had been treated by him for hip disease, and alleged that he had done her great harm. The Supreme Court held that the plaintiff was entitled to damages.¹

Osteopathy is a word that has long been in use to signify disease of bone. It is the worst possible term that could have been cribbed for any form of manual treatment whatsoever. In the *New York Medical Record* of August 16, 1879, I described all these fakirs before they were conceived or begotten and while as yet there were none of them. Here are the words: "In almost every city of the United States and, indeed, of the whole civilized world there may be found individuals claiming mysterious and magical powers of curing disease, setting bones or relieving pain by the immediate application of their hands. Some of these boldly assert that their art, or want of art is a gift from heaven, due to some unknown power which they call magnetism, while others designate it by some peculiar word ending with *pathy*, or cure; and it is often astonishing how much credit they get for their supposed genius by many of the most learned as well as by the most ignorant people.

"We never knew of an osteopath who ever heard of Hippocrates who lived about 400 years before the Christian era. If any of them ever did it is mighty sure that none of them ever read the following words of the Father of Medicine, who said: 'That medicine hath of old both a principle and a discovered track, whereby in a long time many and fine discoveries have been discovered, and the rest will be discovered, if any one who is both competent and knows what hath been discovered, start from these data on the search. But whoever, rejecting these and despising all, shall undertake to search by a different track and in a different manner, and shall say that he hath dis-

¹The *Osteopathic Physician*, page 9, Chicago, Ill., April, 1904.

²N. Y. *Medical Record*, April 15, 1905.

covered something will be deceived himself and will deceive others."

Osteopathy is nothing but a crude, rough, awkward sort of massage or movement done by people who know little or nothing about either, and who profess to know everything and who shut their eyes to all that has ever gone before them in the way of manual treatment. It is doubly true what Dr. John K. Mitchell has said, "that if physicians had only been wide-awake to the value of massage in suitable cases, the osteopaths would never have had a chance." When osteopathy continues to thrive, it is time the general practitioner studied massage, so says the *St. Louis Courier of Medicine*. Some of the osteopaths have been heard to say that they consider the author's Treatise on Massage their Bible; perhaps because it tells them of their sins!

ACQUIRED IMMUNITY.

BY

CASPER L. REDFIELD,
Chicago, Ill.

At the University of Illinois they put some white rats in some small round cages, less than a foot in diameter, and then rotated those cages in a horizontal plane from sixty to ninety times per minute, night and day for several months. Such a proceeding put a considerable strain on those rats, and they had to meet it as best they could by muscular efforts. As the strain was continued for some months without intermission, that muscular strain produced a muscular development of a permanent character, or at least one which lasted a long time. The result was that after the rats were removed from the cages it was found that they continued to perform certain ac-

tions of the kind which they had developed while being rotated.

Some time later, when it was desired to increase the rat stock for further experiments, some of these rotated rats were used for breeding purposes, and it was then found that the progeny inherited the peculiar actions which the parents had developed while in the rotating cages. It was even found that the acquirement was transmitted to the third generation.

If the professors at the University of Illinois had been asked to make an experiment of this kind for the purpose of testing the inheritance of acquired characteristics, they would have refused to do anything of the kind. In fact, they seem to be rather ashamed of the experiment as it is, as they explain that the whole thing, as far as this matter is concerned, was accidental and unintentional, and that the subsequent breeding operations were "solely for the purpose of adding to their experimental stock." (*Science*, December 15, 1922.)

Calmette experimented on injecting snake venom into animals. He began by injecting a very small dose, and a few days later injecting a larger dose. He then continued the process of giving larger and larger doses at intervals of a few days. At the end of six months he had a rabbit capable of withstanding a dose fifty times the size of what would have been an original lethal dose, and in thirteen months he had a horse capable of withstanding one hundred times the original lethal dose.

The same principle is used in the production of antitoxins. For example, diphtheria antitoxin is produced by injecting the toxin of diphtheria into the horse. "The injections are given at intervals of a few days, the doses being gradually increased, until finally after a few months, enormous doses of toxin can be borne with little in-

convenience." Sheep, guinea-pigs, rabbits and other animals are used in the same way.

In any proceeding of this kind, the essentials of producing a high resistance, and one which will continue for a long time after being produced, are increasing loads of toxins and a continuation for months of toxin-resisting efforts. If only a few doses are used, then the acquired resistance soon evaporates.

Some time ago I asked some of the persons who use animals in this way if they would not breed immunized animals to see if the acquired immunity was not transmitted to offspring. In making the request I specified that the animals should be made highly resistant by continued resistance to toxin, and that males should be bred so as to eliminate any possibility of antibodies being carried in the blood or milk of the mother. They all refused, and, as far as I know, none of them has done anything of the kind. Some day, however, some person will do that thing accidentally and unintentionally, as in the case of the experiment at the University of Illinois, and then we will have some more information about the inheritance of acquired characteristics.

Some time ago different eminent medical authorities were asked if there were any experiments to show whether acquired immunity was transmitted by the male. The replies were various, but they amounted to statements that artificial immunity is transmitted by the female by means of antibodies in the blood, but is not transmitted by the male. Asked again if there were any experiments to show that it was not transmitted by the male, the same story was repeated about the female, and some other person was given as authority for the statement that it was not transmitted by the male. When that other person was asked, it was said that still another person at some time

or other had made the statement that acquired immunity was not transmitted by the male.

Of six persons high in authority along this line who were asked this question, every one said that acquired immunity was not transmitted by the male, but not a single one of them was able to point to any evidence to support his statement. In some cases the same person was asked the same pointed question three times without eliciting a satisfactory response. The fact is that there is no evidence of that kind. The whole thing is mere assertion. On the other hand, I know of direct experimental evidence that acquired resistance to a toxin was transmitted by the male for at least two generations. Like the experiment at the University of Illinois, this experiment was accidental and unintentional as far as this matter was concerned. And like that other experiment, this breeding operation followed months in which the males in question were subjected to the toxin. By employing considerable time in the acquirement, the acquired resistance lasted long enough to be found in the next generation.

Plants have diseases, and plants develop resistance to disease. And what is more, resistance to a disease which is acquired by a plant in fighting disease is transmitted by heredity and becomes natural immunity in later generations.

At the North Dakota Agricultural Experiment Station, H. L. Bolley took flax which was non-resistant to wilt and made it highly resistant, and then made it resistant to rust, which is a different disease. And what is more, he finds it possible and practicable to take any variety of flax and make it resistant to any disease to which flax is susceptible. His method is, in its fundamental principles, exactly that used by Calmette in making animals resistant to snake venom,

and that employed on horses to make them resistant to diphtheria toxin. The differences are that Bolley inoculated his plants with live germs, whereas the animals were inoculated with toxin and not with germs, and the animals were inoculated with measured doses gauged to the resistance at the time whereas Bolley inoculated by general distribution because there was no means of measuring the size of the dose.

His method of procedure is to plant the flax on soil which is slightly affected with the disease, or on "sick soil" as it is called. As disease germs are unevenly distributed in any such soil, some plants will receive such heavy doses as to be killed, some will escape infection altogether, and the remainder will be infected to various extents between those two extremes. As in the case of the animals before mentioned, those plants which become infected to an extent less than that which causes death, build up their resistance to that disease by fighting it. Bolley then takes seeds from those surviving plants and sows them on soil which is slightly more infected than that used the previous year.

The seeds which he thus sows came partly from plants which were not affected at all and which consequently did not in any way build up their powers of resistance by fighting the disease; partly from plants which were slightly affected and consequently built up only a small amount of resistance; and partly from plants which were pretty heavily affected and consequently built up considerable resistance by great efforts. As before, some will be killed by heavy infection, a few will escape infection, and the remainder will go thru the process of building up their powers by fighting the disease. From these last he saves seed and plants it the next year on soil which is still more sick, that is, soil which is still more heavily in-

fected with the disease. Under this proceeding "the resisting ability increases from year to year, from generation to generation, even in pure, pedigreed strain which came originally from a single non-resisting seed." In from four to six or eight years he gets plants from which he can obtain a normal crop on the sickest soil, "upon a type of soil on which originally the parent could not have produced a single plant to an acre."

In a private letter Professor Bolley refers particularly to the following varieties of flax made resistant by this method: NDR53, NDR73 and NDR114, which mean North Dakota Resistant No. 52, etc. He also refers to four varieties of wheat made resistant by this method, and among them is "the most resistant wheat in the world"—D5, otherwise known as "Pentad."

Here is direct and positive evidence of the development of disease resistance by the exercise of powers within the plant, and the inheritance of such acquirements. The statement that the improvement comes as the result of selection is an explanation which does not explain. The inherited power of resistance increased from generation to generation. Killing a weak plant A does not add anything to the power of surviving plant B. The selection idea in this matter assumes that the power developed by efforts in the parent evaporates, and then that the same power comes back automatically of itself out of nothing in the progeny. The thing to be explained is that *increase* from generation to generation, and nothing but the inheritance of acquired characteristics is capable of explaining it. It occurs only under conditions which involve previous acquirements of the particular character increased.

The work of Bolley seems to be the earliest in this field, but it does not stand alone. A report put out by the Minnesota

Experiment Station says that Bolley's results have been corroborated at that place. At the Wisconsin Experiment Station they used the same method in making cabbage resistant to anthracnose, and cotton and tomatoes have been made resistant to the organisms which cause wilt in those plants. In each of these cases resistance was produced in the plants by causing them to grow under disease conditions, and the resistance which they developed in that way was inherited.

Human beings live under disease conditions, and when they so live they develop resistance which is transmitted by heredity. For example, a child gets the measles and in due time he recovers. The fact that he contracts the disease is, of itself, evidence that he did not have at the time the power of resisting it, and the fact that he recovers is evidence that he has developed the resistance he did not have in the first instance. The resistance which a person acquires in that way lasts a life time, so that he does not contract the disease a second time unless he happens to become exposed at a time when he is run down or enfeebled.

Powers which are developed by exercise, and resistance to disease is a power of that kind, gradually decline when they are not exercised. Now let us assume that the man's son is a continuation of the man himself, but born some thirty years later. When the son is exposed to the measles, the resisting power acquired by the man in his childhood has gradually declined to that point to which he is not immune, and he contracts the disease as his father did before him. This looks as if the acquired resistance in the father was not inherited by the son, but let us look at a son whose forebears never developed resistance to measles. In 1846, a single case of measles was introduced into the Faroe Islands, where it had

never existed before. Within three months, more than three-fourths of the entire population, adults as well as infants, were attacked and many perished. When measles was first introduced into Fiji in 1875, about one-fourth of the inhabitants died from the disease in about three months. Measles is not a serious disease to the child of parents who developed resistance to that disease, but it is very fatal to the children of persons who never developed such resistance.

What is true of measles is true of all other diseases in which resistance is developed by fighting the disease. In fact, it may be regarded as an invariable rule that the first epidemic of any disease in a community is specially virulent, each successive attack developing in the individuals of the community a certain degree of immunity. The so-called "selective death rate" does not explain this increase in immunity following each successive attack. The death of a weak person does not add anything to the resisting power of some other person, and no one ever found any case of a power being increased in any other way than by exercising it.

Does the reader want to get some first-hand information about the question of the inheritance of acquired characteristic? Easy enough. Write a letter to the National Research Council, Washington, D. C., or to the Rockefeller Institute for Research, New York City, or to the Bussey Institution for Research, Boston, Mass., or to any professor at any university. Refer to the development of powers by continued exercise, as in the development of resistance to toxins, or the development of physical strength in athletics and trotting horses, or the development of mental powers by education. Distinguish this interior development by the exercise of interior forces from the action of the environment, which repre-

sents the effects produced by the action of outside forces, and then ask if there are any experiments or other evidence to show that these acquirements are not inherited.

Do not accept any statements about investigations into the actions of the environment, because this is not a case of the environment. It is a case of what occurs within the protoplasm of the animal by reason of the actions of the forces at that place. And do not be put off with generalized statements that scientific investigations show that the effects of education and training are not inherited. If you get any such reply, ask for the records of those investigations so that you can examine them for the purpose of seeing what they amount to. If you persist in asking for those records you will be surprised to find that there are none. If any one claims that any particular experiment or research shows anything of the kind, send that information to me at Chicago. I want to examine it.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

XI.

"A *pancháyat*¹ must be called. Neither the *hakims* nor the magicians have as yet saved a single life. Soon we shall not be enough to carry the dead to mother Ganges."

"Ram is displeased with our town, no doubt," asserted a second member of the little group of Hindu caste men, "Narganj has not suffered such a visitation of a god within the memory of my mother."

* * * * *

At the sitting of the *pancháyat*, conflicting views were expressed. The five men were agreed upon the gravity of the situation, but their varied education and experience led their minds in different directions.

¹Pun-chi-ut, council of five.

"Let us call the foreign Doctor Sahib," urged Moti Lal. Two others assented vigorously.

Their rashness was checked by Ram Dass, the oldest member. "Our caste must be preserved," he stated solemnly. "We are doctoring now as our fathers doctored. We are their children. How can we change our custom?"

"The *hakims* do us no good. Let them all be dismissed," advised the fifth. "If we are to die, we shall die. Why anger the gods by interfering with their plans?"

Unable to agree, an adjournment was made to the following day.

At the hour of meeting only four men were present.

"Ram Dass was stricken last night," announced Moti Lal.

"It was written on his forehead," quoted the fatalist stolidly.

A substitute was secured in time, and the deliberations of the august body continued. The new man proved to be a radical, for his son had once been cured of boils by Dr. Jordan. Tho not a loquacious member of the council, his vote supported the three who desired a change. The lone conservative was easily won over by the argument, "Only see what has happened to Ram Dass. No one of us who champion the foreign Doctor Sahib has been smitten."

The vote was carried. By 1.30 P. M. a commission of two men was dispatched to Dr. Jordan's hospital, fifteen miles distant, to announce the decision of the *pancháyat* to receive his ministrations. Moti Lal conveyed the commission in his bullock cart.

* * * * *

A breeze, which Dr. Jordan optimistically characterized as cool, flitted across the hospital compound as he came out from dinner. In the light of the full moon several members of his staff lounged about in the open, some reading, some conversing quietly. He joined them for a smoke before making the rounds for the night. Several surgical cases required alert attention.

"Who is it?" challenged the watchman at the gate. The reply did not reach the listeners, but soon a bullock cart crept up the graveled drive.

An orderly stepped to meet the visitors.

"A commission from Narganj," he explained, as he came back to the group.

Dr. Jordan walked to the cart and exchanged *salaams* with the commission.

"Our town is plague-stricken, *hazur*," began Moti Lal, the spokesman. "The *pancháyat* has determined to waive caste rules and allow you complete freedom in handling the disease."

"Are many ill?" inquired Dr. Jordan.

"A quarter of the town have died, one-half of the remainder were ill at noon today. How many have been stricken since we left, who knows!"



(Photo by E. H. Langdon.)

FIG. 1. Building the Hospital.

"And have you no doctor at all?"

"Oh yes, *hazur*, we have a dozen *hakims* and magicians. They have made charms without number, but the spirit of the angry god blows them away as the wind blows chaff from the threshing floor. To elephants we have vowed offerings of cocoanuts—many thousands of them. But the vows will not be paid, for no one recovers. All the powders and extracts of the *hakims* are as sand and ditch water."

"I am sorry," said Dr. Jordan, "but my surgical patients cannot be left."

Moti Lal was staggered. A refusal was beyond his comprehension. He had always thought the Doctor Sahib pleased to receive high-caste patients. Dr. Jordan drew a word picture of his many cares and duties, but the Hindu mind could not relinquish its goal.

"Let me go, Sahib," spoke up a voice from the group of onlookers.

Dr. Jordan turned and met the gleaming eyes of his first assistant, Dr. Ali Khan. "You?" he exclaimed, speaking in English. "Do you realize what there is out there? Two thousand people down with plague, ten thousand rats and mice scattering it among the rest of the population. Their doctors are drawing pictures of elephants and making offerings at crossroads. They are slaves to *dastúr*.¹ What can medical science hope to accomplish in such a situation?"

"Nevertheless, I will go, Sahib, if you will kindly permit me. My mother came from Narganj."

But the volunteer met an unexpected rebuff from the commission.

"The *pancháyat* specified you only, *hazur*. Already we have had many Indian doctors and they have saved no lives."

"Dr. Khan cures exactly as I do," affirmed Dr. Jordan. "He uses the same methods and the same medicines."

"Would he bring your medicines with him?" they hesitated.

"Certainly. He will do just as well for you as I could do."

The two men whispered together. "We will deliberate," announced Moti Lal. Stirring up his sleeping bullocks, he drove on around the hospital.

An hour later the commission returned to report its decision. "If you can send two, *hazur*. One Indian doctor would hardly suffice."

"He will take an assistant," Dr. Jordan assured them.

"And plenty of your medicine for both of them to use?"

"Yes, a chest full of medicine."

"Very well. It is settled. Let them prepare to start at once."

By 11 P. M. Dr. Khan and the orderly were stowed away in the bullock cart, with the precious medicine chest tied on over one wheel. The slow, jolting motion

¹Custom.

induced sleep, and when they reached Narganj, at 6.30 A. M., they were ready for work.

A swift inspection of the town, and Dr. Khan laid out his plan of action.

"Give me ten strong men," he ordered, "who will do as I tell them."

The ten were quickly produced. To them he spoke at some length concerning the disease and the program to be followed. That rats and mice could be responsible for their affliction was so novel a suggestion that the ten faces looked dubious as he talked. The bite of a flea hardly seemed to them as powerful as the wrath of an offended spirit. But they agreed to follow orders.

"You are my lieutenants," said Dr. Khan. "Together we shall check this scourge, and perhaps save some who are already ill. Eight of you are to get the new town built. Gather ten men apiece, have them cut bamboo, and erect shelters at once, so that we may move the sick before noon. Act quickly."

During the next few hours Narganj presented a picture of organized confusion. Strips of cloth stretched across upright bamboos formed a new town, at some distance from the old. To this shelter the sick were carried, on crude litters. Before the last strip of cloth was laid, every patient had been transferred. The town was abandoned to the rats. Only their few dishes and scanty supply of food were gathered up and brought by the women. To avoid argument, the poison was distributed after dark.

Dr. Khan's temporary dispensary also enjoyed but a cloth canopy. With Herculean endurance he trained his ten lieutenants to feed and care for the sick. No less busy was his orderly, who answered questions, quieted murmurs, and indefatigably labored to get everyone in line with the new order, as he went down the long avenues administering medicine.

Inoculation seemed no stranger than other items under this new régime, so there was no opposition.

After the second day no new cases developed. Many of the sick recovered. Such rapid results amazed the people. "Is it magic?" they whispered. "Perhaps this doctor's god is more powerful than ours."

"Doctor Jordan Sahib sent the magic in

the big chest," ventured another. "We must keep it here always."

"Let us also keep this doctor and his assistant, always," boldly suggested a young man.

"Be not over rash, son," chided his father. "After this period of affliction is over, our caste must be recovered."

Some weeks later, when the people had returned to their houses, the *pancháyat* sat, to determine what reward to bestow upon Dr. Khan.

"Money we have not," said Moti Lal. "But our hands and our hearts are his."



(Courtesy of Presbyterian Board.)

FIG. 2. DR. ALI KHAN, HIS FAMILY AND HIS HOSPITAL.

"Let us build him a hospital here among us," eagerly put in another. "Then he will stay with us, and never wish to return to Jordan Sahib." The vote was unanimous.

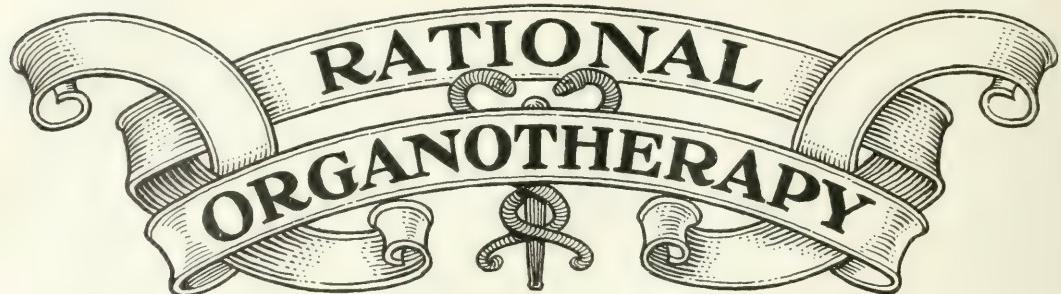
* * * * *

A weird chanting rose from the compound of the new hospital. "Ram, Ram, Ram *ki jai!*"¹ droned the men as they laid the bricks which were carried by the women and children.

"Say not 'Ram *ki jai!*'" expostulated Moti Lal. "Ram did nothing to save us. Let us rather sing 'Khan *ki jai!*'"

Fifty voices seized the words and sent them over the housetops, "Khan, Khan, Khan *ki jai!*"

¹Victory to Ram.



Modification of Insulin by Pituitary Extract.—Burn (*Journal of Physiology*, June 8, 1923) found that subcutaneous injections of extract of posterior lobe of the pituitary gland given simultaneously with injections of insulin, diminish or abolish the fall of blood sugar produced by the latter. The doses of pituitary extract used do not, when given alone, produce a rise of blood sugar sufficient to explain this inhibition of the action of insulin as being the result of an algebraic sum. This effect is not produced by similar extracts of anterior lobe of pituitary, or of spleen, thyroid, brain tissue or thymus. Nor is it produced by histamin. The property, in the case of posterior lobe extract, is destroyed by treatment with normal alkali in the cold. Pituitary extract removes the symptoms of hypoglycemic convulsions, causing a rapid elevation of the blood sugar. The effect of a small dose of insulin is greatly increased by previous intravenous injection of ergotoxin. Confirmation is given of the following points: (a) Pituitary extract inhibits epinephrin hyperglycemia and glycosuria; (b) ergotoxin abolishes epinephrin hyperglycemia and glycosuria; (c) insulin greatly reduces the hyperglycemic action of epinephrin. Instances are cited in which subcutaneous injections of pituitary extract in the normal animal led to a fall of blood sugar, tho, as a rule, such injections cause a transient rise.

Glandular Therapy and Body Growth.—According to a report recently made, the physical records of the graduating classes of 1920-1921 at the United States Naval Academy revealed that approximately 10.6 per cent. of each class failed to attain the minimum height for officers of 66 inches. Capt. D. N. Carpenter and Lieut. D. Ferguson of

the United States Navy attempted to stimulate growth by endocrine therapy. The group of undersized midshipmen submitting to organotherapy was wholly volunteer. The conclusions based on the study were:

1. The new regulations governing the height requirement of candidates for the Naval Academy, namely, 62 inches at 16 years of age and an additional inch for each year or fraction over six months, if rigidly enforced, promise to reduce underheight in officers by almost one-half.

2. Growth is not stimulated by thyroid and pituitary therapy in persons at or near maturity.

3. Preparations of anterior pituitary extract appear to be inert as growth stimulants in these men, when administered orally.

4. There is possibly an appreciable percentage of thyropenia in this country.

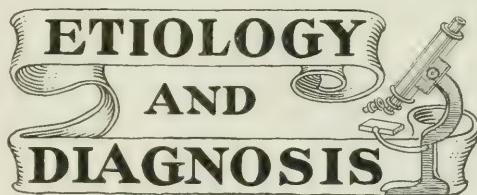
The Use of Pituitary Extract in Pregnancy and Labor.—When pituitary extract is used during labor it should be administered in small doses—never stronger than 1 c. c. of a 10 per cent. solution. Williamson (*London Lancet*, October 21, 1922) regards 1 c. c. of a 20 per cent. solution as a dangerous dose. In the first stage of labor, save in one or two very exceptional cases, it should not be used. If the drug is given with the cervix three-quarters dilated, the child may be born after three or four severe pains, but it will tear thru the cervix, not stretch it open. In certain cases of accidental hemorrhage and in placenta previa pituitary extract is useful, but not in cases of concealed accidental hemorrhage with albuminuria. This is essentially a toxemia with necrosis of uterine muscle, and a rupture of the uterus might occur. In the sec-

ond stage there must be four indications before the drug is exhibited: (1) The head must be low in the pelvis; (2) there must be no obstruction at the vulval orifice; (3) the patient must be a multipara; (4) forceps must be ready boiled. One c. c. of 10 per cent. solution should be the maximum dose. After fifteen minutes, if the baby is not born, delivery by forceps should be undertaken, and even before if there are variations in the fetal heart-rate. Eclampsia with a high blood-pressure is apparently not a contraindication of pituitary.

Dr. Ernest Holt has investigated the question whether pituitary affects the child. There is apparently more danger of asphyxia livida or pallida after pituitary has been given, and the proportion of still-births is larger after its use. At autopsies on fatal cases there are often meningeal and cerebral hemorrhages. Therefore, in the second stage the drug must be used with discretion. On the other hand, in the third stage of labor, after delivery of the placenta, and especially with post-partum hemorrhage, the effects of pituitary extract are excellent. It acts quicker if injected into the uterus direct, and after-pains are often relieved thereby.

Obesity in Children.—Apert, writing in *Médecine*, April, 1923, calls attention to the light thrown on obesity by endocrinology, especially in children. Aside from girls approaching puberty, obesity in children over 6 is abnormal, and requires treatment. But the mechanism varies in each case, and treatment must vary in consequence. As a rule, the obesity is the result of some upset in endocrine balance, and treatment must aim to restore the harmonious concerted action. This requires prudent guidance, as he shows by some typical examples. The big, active obese child should eat less meat and fats and make up with fruits and vegetables. The pale, languid obese child should be given substantial food in small compass, with iron and arsenic and organotherapy. Not the scales but the girth of the abdomen should be the guide here. Thyroid treatment, if needed, should be given very cautiously, only three times a week and in small doses, but it may have to be kept up a long time. He adds that the effect of any measures which cause rapid reduction in weight

is only ephemeral, and it is obtained only at the expense of the general health. This is the case in children even more than in adults.



Management of the Female Urinary Bladder After Operation and During Pregnancy.—Curtis (*Journal A. M. A.*, April 21, 1923) has studied the effect of residual urine throughout the period of convalescence of 1,595 female patients subjected to serious operations. Use of the catheter has been avoided when possible, but no patient has been allowed to suffer from distension. Residual urine has been present after the return of spontaneous micturition in more than 64 per cent. of all repeatedly catheterized patients. The most important principle in our treatment of such cases has been the daily passage of a catheter, immediately after urination, until residual urine is no longer present. Only three of those who were catheterized daily until the return of normal function developed urinary tract infection. These three subsequently showed residual urine after they were thought to have returned to normal, and it is believed that lack of treatment during this time accounts for the infection. Laboratory study of urine from patients subjected to postoperative catheterization reveals that there may be temporary cystitis. This invariably—and usually very promptly—disappears if freedom from residual urine is maintained. Instillation of $\frac{1}{2}$ per cent. silver nitrate and administration of urinary antiseptics by mouth are helpful adjuncts in the treatment. Strict avoidance of the use of the catheter after all operations, despite distress, would perhaps reveal equal freedom from infection; but this plan cannot be followed without much suffering to many patients. Moreover, animal experimentation indicates that if bladders are allowed to distend and overflow, considerable back-pressure destruction of kidney tissue results. Clinical evidence indicates that residual urine occurs very often in pregnant women. The notable frequency with which it is present in those with pyelitis of pregnancy suggests that ascending infection from this source is of considerable importance.

The Study of Colitis and Its Origin.—Richardson, in discussing this topic in *Southern Medicine and Surgery* (September, 1923), says that the term, colitis, like the equally indefinite term, influenza, has been made to cover a multitude of conditions as well as a world of ignor-

ance, both medical and lay.' Perhaps no term so terrifies the Southern mother; and she is only too prone to magnify every simple diarrhea, especially if accompanied by fever, until it reaches the proportions of this terrible scourge.

Many of us can remember when the term malaria, was used as a similar blanket diagnosis for all sorts of obscure conditions; and even Laveran's wonderful discovery has not yet sufficed to rid the laity and some of the profession of this lazy man's diagnosis. The microscope has, however, made it possible for us to restrict the diagnosis of malaria to the cases which merit it and it is greatly to be hoped that the time is not too far distant when it will do a similar service for colitis.

It would take too long to review here the research work that has been done upon this problem, even if we restricted ourselves to the work of very recent years. Suffice it to say that there seems to be a growing conviction on the part of the best workers in this field that but a fraction of the cases of so-called colitis are specific in origin. There is, however, an equally strong conviction on the part of some that there will be found, sooner or later, a definite organism responsible for this fraction, quite as truly specific as that which we have long since recognized as the possible factor of that other colitis, typhoid or enteric fever.

It is interesting to note in this connection that one of our own research workers, Dr. H. P. Barrett, of Charlotte, has been doing some most interesting work along these lines for the past few years. His forthcoming notes on the results obtained so far will be awaited with interest by the readers of this journal, as well as by practitioners of medicine everywhere. The end is not yet in sight by any means, but the possibilities which would be opened up by the solution of this problem are most intriguing. Not only a vaccine treatment for true colitis might fairly be hoped for, but as well a definitely established prophylaxis, which might prove as great a boon to babies as has the typhoid prophylaxis for the whole population. The editor of this department would urge upon all practitioners who have clinical material of this sort at their disposal to communicate with Dr. Barrett, in order to make it possible for him to secure the varied range of stool specimens essential to the successful carrying on of this work. The establishment of a hospital unit is looked for in the near future, where selected typical cases may be studied throughout their course from the clinical as well as from the laboratory angle. But at this stage of the work a wide range of single specimens is highly desirable, and any medical practitioner who has any of these cases at his disposal can be of great service in the solution of this problem.

Skin Symptoms of Acute Appendicitis.—The principal detail of Livingston's (*Archives of Surgery*, July, 1923) test is the comparison of the slight discomfort caused by a vigorous twisting pinch of non-involved skin compared

with the much more severe and often quite extreme pain caused by twisting involved skin within a certain triangle. A line from the umbilicus to the highest point on the right iliac crest forms the upper side; a line carried from this point to the right pubic spine forms the lower side, and a line from the right pubic spine to the umbilicus closes the triangle. Skin signs within this triangle, and maximal at its center, constitute confirmatory evidence of appendicitis. When the signs extend definitely beyond its borders on the anterior abdominal wall, or are maximal elsewhere, they are considered negative for appendicitis. Skin signs above the superior line of this triangle suggest cholecystitis, etc., while those below its inferior line suggest right renal colic, etc. In a series of 75 consecutive cases clinically diagnosed as acute appendicitis, the skin signs were positive in 54 and negative in 21 instances. All patients presenting positive signs had acute appendicitis; 11 of those presenting negative signs had gangrenous or perforative appendicitis. In the remaining ten negative cases, the findings were: General peritonitis of unknown origin, one case; pneumonia, two cases; acute gastritis, one case; pulmonary tuberculosis, two cases; right renal calculus, the skin signs being present on the upper and inner portion of the right thigh, one case; hemorrhagic ovarian cyst, the skin signs being present over the middle of Poupart's ligament only, one case. In none of these ten cases was acute appendicitis present.

Cause of Varicose Veins.—Nicholson (*Archives of Surgery*, July, 1923) has made a special study of varicose veins of the lower extremities, and more particularly with the etiology of the conditions. Various theories have been advanced to explain the dilatation of the vessels. Nicholson's theory is that various factors are operative, each somewhat dependent on the other. Since the saphenous opening is always protected by two or more valves, and the saphenous wall must at least intermittently bear the weight of the contained column of blood, it appears that the primary cause of varicose veins of the leg is not valvular insufficiency and static pressure. On the other hand, valvular insufficiency, which allows an ill-directed and retarded blood flow, is a very important secondary factor. The infrequency of varices in the arms, where the weight of the column of blood in the veins is from a level only a little above the elbow, proves that static pressure is a secondary factor. Similarly, the relatively less severe process in the upper saphenous, as compared with lower levels, supports this conclusion. The primary cause may be mechanical, trophic, inflammatory or toxic. Valves in the veins of the leg do not relieve the vessel wall of the static pressure exerted by the contained column of blood. During the brief interval of contraction of the muscles of the leg, the static pressure of the column of blood above the site of contraction is not exerted on the vessel wall below. Even during

this interval the vessel wall is not relieved of any pressure, for the arterial pressure in the lower part of the vessel must be greater than the static pressure normally exerted by the column of blood in the saphenous. The chief functions of the valves are: (a) To aid the muscles as they contract in pumping the blood toward the heart; (b) to direct the blood toward the heart; (c) to protect the openings of small branches from a backward flow, and (d) to prevent blood from being forced backward by intermittent muscular or mechanical pressure. An erect posture, demanding little activity of the legs, tends to induce varicosis, or aggravates the condition, if already present.

A Test for Hepatic Inefficiency.—In 1921, Maclean and de Wesselow, states an editorial in the *Journal of the A. M. A.* (September 15, 1923), showed that a normal adult could ingest 50 gm. of levulose without any appreciable increase in the blood sugar. It was also pointed out that levulose was the only sugar in ordinary use that did not produce a rise in the blood sugar concentration. In the same year, Spence and Brett published the results of a series of cases in which this test was applied. They concluded that in diminished liver efficiency a definite rise in blood sugar resulted from the ingestion of levulose, the height and length of the blood sugar curve being in proportion to the degree of liver inefficiency present. They asserted, further, that the test afforded a means of estimating liver damage in cases of toxic jaundice following administration of arsphenamine and in other diseases of the liver. Covell has recently applied this test in various diseases, particularly amebic dysentery. He used it on a total of 58 patients, giving 50 gm. to those weighing 168 pounds (76 kg.), 40 gm. to those weighing 126 pounds (57 kg.), and 35 gm. to those weighing 98 pounds (44.5 kg.). The blood sugar was estimated immediately before giving the levulose and at intervals of one and two hours after its ingestion. When it failed to return to nearly normal after the two hour interval, hepatic inefficiency was considered present in proportion to the degree it remained high. The tests were controlled by ten presumably normal subjects. Covell concluded that the test forms a valuable means of determining the degree of hepatic inefficiency in amebiasis, and of showing whether liver inefficiency has been restored by a course of treatment. It is of value in chronic as well as in acute cases of liver disease, altho the response is less marked. The test also forms a valuable indication of hepatic disease in certain cases in which there is no clinical evidence of damage to the liver.

The Causes of Asthma.—Aaron Brown (*New York Medical Journal*, September 19, 1923) concludes his valuable paper as follows:

1. Asthma is an allergic not an anaphylactic manifestation.

2. The causative factor in asthma is ascertained in a large percentage of cases and in these cases satisfactory results are obtained by the methods outlined above.

3. By skin tests we can determine potential hypersensitiveness.

4. The intradermal method of performing the skin tests is the method of choice because of its greater diagnostic accuracy.

5. Positive skin tests must be borne out by history, to establish suspected substances as etiologic factors.

6. Eighty per cent. of cases give a positive skin test.

7. Of these about ninety-seven per cent. in adults and ninety-five per cent. in children are due to inhalants.

8. A small percentage of cases are due to food proteins.

9. The treatment of asthma is specific and consists of 1, removal of offending substances, and 2, therapeutic injections of extracts of offending substances.



Treatment of Pleuritic Effusion with Calcium Chloride.—Observations on the diuretic action of the salts of potassium and of calcium, according to a writer in the *Clinique et Laboratoire* (May 30, 1923), have established the fact that calcium chloride, in inflammatory affections of the serous membranes, not only sets up an absorption of the effusion, but has an effect as well upon the temperature. Krummenacher reports some personal observations to this effect.

Like Professor Blum, of Strasburg, he advocates the institution of a dechloridized diet before the administration of calcium chloride, which he has given in doses varying from 11 to 22 g. The method which has appeared to him the most satisfactory and the most easily taken by the patient, is to give from one to two spoonfuls of the concentrated solution—30 g. of the dry granulated salt in 100 g. of water—in a little coffee and milk and to drink some mouthfuls of the coffee and milk afterwards.

If the intravenous method, in certain cases, can have immediate and lasting effects, in the subacute or chronic cases administration by the mouth seems to be more efficacious, because it allows of a prolonged introduction of the calcium.

As a general rule, treatment by calcium chloride frequently allows the avoidance of tapping, and reduces considerably the duration of the disease.

The existence of open tuberculosis is not a contraindication to its use. In the cases which

came under observation by Krummenacher there was, on the contrary, a most favorable influence and none of his patients suffered the least harm from the fact of undergoing the treatment. After the disappearance of the inflammatory exudate there was a rapid recovery of strength and of the general condition without one morbid symptom showing itself in any other organ. In particular, there was no reawakening of a tuberculous affection in the lungs.

Some relation exists between the quickness of the action and the chronicity of the disease; the affections react very much better the younger they are.

The presence of adhesions is an obstacle to the quick action of calcium chloride, and calls for the use of large doses and prolonged treatment. It is important, however, not to prolong the administration of calcium beyond five or six days, even if the therapeutic effect has been insufficient. Prolonged administration may, indeed, cause trouble in the shape of headache, anorexia, and unstable temperature. It is better in such cases to give up the treatment altogether for an interval of some days.

Professor Blum gives a minimum dose of 15 g. in the twenty-four hours, and such doses very seldom cause vomiting or diarrhea. If the dose succeeds in promoting diuresis by the third day, this amount is cut down by half. If, on the other hand, increasing doses have not given any result by the fifth or sixth day, it is preferable to leave off the treatment—at all events for some days.

It appears to be necessary that the kidneys shall be in good working order for this treatment to be instituted. It is applicable to the great majority of serious inflammations, but has a truly remarkable effect in the serous effusions of the pleura.

Calendula for Burns.—Gregor, says the *Medical Summary*, claims that calendula in his hands has proved a very efficacious dressing in burns; that it relieves pain, promotes rapid healing, and is an antiseptic which prevents pus formation, thus inducing aseptic healing.

The proper preparation to use is the non-alcoholic extract or fluid extract of calendula or marigold. The writer states that he adds two ounces of a reliable calendula to fourteen ounces of saturated boric solution and applies on gauze or absorbent cotton.

Enuresis in Children.—Saxl and Kurzweil, in their valuable contribution in *Archives of Pediatrics* (March, 1923), present the following definite rules and regulations in all cases of enuresis, which must be carefully observed by the parents and the patient:

1. No coffee, tea, cocoa, or spirituous liquors of any kind.
2. No fluids of any nature four hours before the hour of retiring, with the sup-

per, consisting of solid food at a stated time. 3. A cold friction rub to the chest, sides, and lumbar spine is sometimes advised in older children. 4. Elevate the foot of the bed one or two inches from the floor. 5. The patient should sleep on the right side and not on the back and a towel should be tied around the patient with the knot at the back. 6. Hands are to be kept outside the coverings. 7. Prescribed medicine should be taken regularly and exactly as directed. 8. Patient or parent must present a written chart of progress at each subsequent visit.

Cases with focal causes, such as *Oxyuris vermicularis*, masturbation, cystitis, vulvovaginitis, anemia, malnutrition, neurasthenia and neuroses and neurogenic diseases require appropriate treatment. In cases of anemia and malnutrition, strychnine is a valuable adjuvant. Endocrine disturbances are given thyroid and posterior pituitary extract. Cases of highly acid urine, diabetes, and nephritis are treated symptomatically. Idiopathic cases (undetermined origin) respond satisfactorily to atropine sulphate in large doses. The majority of cases of enuresis are amenable to treatment when diligence and perseverance are patiently observed by the physician.

Removal of Adhesive Plaster.—Hunsberger gives the following method as exceedingly serviceable for detaching adhesive plaster from the skin with a minimum of discomfort to the patient: An adjunct is a liquid which dissolves rubber readily; is not inflammable; is free from noxious or explosive vapors; is not too volatile; does not unduly irritate the skin; is comparatively inexpensive, and is readily obtainable. Surgeons will find that carbon tetrachlorid possesses all of these desirable attributes, and one other which is rather undesirable, namely, a somewhat unpleasant odor, which, fortunately, dissipates readily. If the odor is found to be objectionable, it may be mitigated by the addition of methyl salicylate or other inexpensive substances available among the essential oils.

The chemical should be obtainable as such in any drug store; but if, perchance, it is not available as carbon tetrachlorid, it may be bought, at a slightly increased price, under one of the many trade names by which a host of "safe cleaning fluids" is exploited nowadays.

If purchased under a trade name, care should be exercised to select a preparation that is guaranteed to be free from the equally efficient but highly dangerous substances benzine or gasoline.

Carbon tetrachlorid has been used with success for this purpose by prominent Philadelphia surgeons for a number of years.

Vaccine Therapy in Cystitis.—Baer (*Zentralblatt für Chirurgie*, June 23, 1923) gives a comprehensive report of the results in cystitis and

pyelocystitis, associated with a partially paralyzed state of the bladder, following injuries or disease that temporarily affected the spinal cord. There were also some cases of post-operative cystitis following prostatectomy by the Freyer method. The latter cases are often of a very stubborn type, in which all forms of therapy prove ineffective. Also in Baer's cases the customary treatment with internal bladder disinfectants and bladder lavage brought little improvement. He therefore gave up all internal and local treatment and applied exclusively autogenous vaccine therapy. In the majority of cases there was a mixed infection of *Bacillus coli* with *staphylococci* or with *diplococci*. In the preparation of the vaccines, cultures were taken from every case, and after rinsing them in a physiologic sodium chlorid solution, they were killed at a temperature of 65 C. and were made stable by adding 1 per cent. phenol solution. Four solutions of varying content were prepared, ranging from 5 to 25 million killed bacilli per cubic centimeter. The injections were made according to the degree of inflammation of the bladder, at various intervals, usually every two or three days; the course of treatment covered about five weeks. Soon after the first injection, substantial improvement was noted; the urine became clearer, the pain during micturition decreased, and the number of bacteria in the urine diminished. The general health also improved greatly. There were no unpleasant secondary effects. Only rarely was a transient elevated temperature noted (38.5 C.). No impairment of kidney function was observed. In a few especially refractory cases, after an interval of six weeks, another course of treatment was given, which then was entirely successful.

Treatment of Zona by Picric Acid.—The application of picric ether to the eruption of zona was recommended by Professor Debove. After repeated attempts Piorot-Delpech (*L'Information Médicale*, April, 1923) has arrived at the solution which yields the best results. He found that the most satisfactory was a mixture of ether and alcohol in equal parts, which is practically Hoffmann's solution, in which picric acid is dissolved in the cold up to saturation. The solution thus obtained is one of nearly 5 per cent. In zona, this solution is lightly applied over the eruption every two days. It is allowed to dry, which it does at once, and then covered with absorbent wool. This external treatment is associated with the administration of one or two grams of antipyrin a day according to the intensity of the pain.

As a rule, the first application of the solution relieves the pain, the analgesic effect of picric acid is very definitely produced. The vesicles begin to dry up, and all the elements of the eruption clear away. In no case have more than five applications been necessary to obtain a cure. These should be made every second day; daily applications should be ex-

ceptional and made with prudence. When the vesicles have practically dried up and the pain has disappeared, the application of the solution may be replaced by the use of an inert powder, such as talc and subnitrate of bismuth in equal parts.

The solution consists of:

Picric acid, crystallized 50 g.

Sulphuric ether,

Alcohol, pure of each 50 g.

Careful management away from a naked light is essential, and the soiled dressings must not be burned.

Sulphur in the Treatment of Arthritis.—Sulphur has long been used in the treatment of skin affections, and as an adjunct in the treatment of syphilis, but only recently has it been used at all extensively in the treatment of joint affections, maintains a writer in the July 14, 1923, issue of *The Lancet*. The chronic rheumatoid and osteoarthritic conditions might well be placed foremost among the diseases which cause the greatest and most prolonged suffering and disability to the patient and the greatest perplexity to the practitioner, the very hopelessness of all known methods of treatment driving him to despair and leading him to expend his energy and thought on more profitable fields of research. From the reports received, it appears that sulphur given intramuscularly in the form of oily emulsions has a specific effect on chronic arthritic conditions, and while not in every case producing complete restoration of function, affords a great measure of relief from pain and increase in mobility, thus enabling the patient to return to a useful and comfortable existence. Dr. Herbert Hayn of Breslau reports 11 cases of different forms of arthritis, including acute and chronic rheumatoid and osteoarthritis, gonococcal arthritis and gout, some of many years standing and some completely bedridden. In all, undoubted improvement was seen, most noticeable in those cases which had resisted the orthodox methods of treatment, and bedridden patients left the hospital walking. The sulphur therapy consists of intramuscular injections of a 1/8% emulsion of sulphur in olive oil repeated at intervals of 5 to 6 days. The number of injections required varies, in the cases reported from 5 to 13. The immediate reaction to the injection which is independent of the quantity given is severe. The temperature rises within 12 hours to 40°C., and a rigor occurs, the patient complains of intense headache, general malaise, and great pain, most marked in the affected joints. Locally there is a small circumscribed swelling and slight tenderness, but no cases of abscess formation or necrosis have been observed, nor has there been any disturbance of the function of the renal vascular, or hemopoietic systems. The reaction subsides completely in 24 or at most 48 hours, and the patient feels perfectly well. Combined with the sulphur therapy, such external applications as hot air, baths, massage,

and passive movements should be persisted in, and it is important that these should not be omitted, for it is only during the sulphur treatment that their maximum benefit can be obtained. The result of the treatment on the joints is that there is rapid diminution of pain, the swelling decreases, and the range of movement is markedly increased, while the general condition of the patient correspondingly improves. Acute affections which respond to salicylates were not treated by this method.

Paraffin for Herpes Zoster.—Fox, in a recent issue of the *Journal of the American Medical Association*, describes a treatment for herpes zoster or "shingles," which consists simply in spraying the melted paraffin, with an atomizer, on all of the cutaneous lesions and covering these areas with a generous layer of absorbent cotton held in place by bandages.

In using this treatment the essential points are: (1) The case selected should be only in the eruptive stage.

(2) The previous dressings should be removed gently, avoiding possible rupture of the underlying vesicles.

(3) The temperature of the dressings when applied should be not high enough to burn or blister the skin.

The paraffin dressings, like many another heritage of the war, are not to be used indiscriminately in every case of herpes zoster or in every case of burn. But in cases selected with regard to previous experience, it is undoubtedly a valuable measure.

The Control of Hemorrhage in Tonsil Operations.—Persistent hemorrhage from the tonsil is comparatively uncommon, asserts Chase in the August (1923) issue of the *Hahnemannian Monthly*, while fatal secondary hemorrhage is rare. The use of some of the new instruments for tonsillar enucleation, *i. e.*, certain modifications of the Sluder tonsillotome, as that of Douglas, LaForce and Braun and numerous others, or the use of the finger method of dissection followed by the snare to sever the vessels, result in a smaller amount of hemorrhage. Often the operation may be bloodless, or nearly so. Of the three instruments mentioned above, the first two have a dull and a sharp blade, the third, a dull blade and wire snare. After the instrument is applied, the dull blade or snare is tightened, and left in place for three to five minutes, and the tonsils are removed.

If slight bleeding begins shortly after the patient returns to his room, the use of an ice collar and cracked ice by mouth will often be sufficient to control the hemorrhage, especially if it is capillary oozing. If this is not sufficient, one of a number of chemical hemostatics may be used. Spirits of turpentine, ferropyrine, thromboplastin, hydrogen peroxide or Monsel's solution (dilute or even full strength), etc., applied to the bleeding fossa on a sponge, with pressure which is maintained for ten or fifteen minutes, will often

arrest the hemorrhage.

Hemorrhage, if caused by the presence of large arteries or veins, may be stopped by the following methods:

1. Picking up the bleeding vessel, and suturing by use of the "pig's gate" stitch.

2. The anterior and posterior pillars may be sutured together with catgut or Michael's clips.

3. A small sponge may be placed in the tonsillar fossa, and the pillars sewed together over it, holding it in place and producing pressure on the bleeding vessels. The sponge may be removed in forty-eight hours.

4. Horse serum or human serum may be injected subcutaneously.

5. One of the various tonsil clamps may be used to produce pressure.

6. It may be necessary in very rare cases to tie the external or even the common carotid artery.

The writer uses spirits of turpentine as a routine application to the tonsillar fossa after enucleation. A sponge moistened with turpentine is held against the fossa for a few seconds. When this procedure is used the patients have less postoperative sore throat.



The Cancer Menace.—The ministry of health of Great Britain, according to the London correspondent of the *Journal of the American Medical Association* (September 15, 1923), has issued a circular to the local health authorities stating, in non-technical language, the present status of our knowledge of malignant disease as summarized by a departmental committee on cancer of experts appointed for the purpose. Apart from the appointment of this committee, the minister has directed the medical intelligence service of the department to keep in touch with the developments of cancer investigation, and the department undertakes the prosecution, in regard to cancer, of researches of an epidemiologic and statistical character, both at home and abroad. The circular points out that in the space of two generations the recorded mortality of cancer has trebled. This increase cannot wholly be accounted for by longer life or better diagnosis. On the other hand, the death rate from cancer is not now increasing for men up to 45 years, and for women up to 60. The most rapid increase is occurring in extreme old age. Hereditary predisposition to cancer has not been proved to be of any practical importance in the case of man. Nor can it be said that the use of any particular food increases the liability to cancer or prevents it from occurring. The idea of "cancer houses" is unsupported. Cancer has not been proved to be infectious or contagious. The danger of long-continued irritation, such as from a clay pipe on the lip or a jagged

tooth, is indicated. It is urged that every form of chronic irritation, suppuration, or ulceration be treated at once. Early recognition not only of cancer but also of precancerous states is important. The public should know that cancer in its early stages is almost invariably not accompanied by pain, and is sometimes painless thruout. The good results of operation in early cases and treatment by radium, Roentgen rays, and diathermy are mentioned, and a warning is given against recourse to quack remedies.

Dull Hearing.—It is the belief of Clay (*The Hahnemannian Monthly*, September, 1923) that many of the causes of dull hearing have their beginning in very early life. We have been impressed during later years, in our histories of dull hearing cases, of the presence of metabolic disturbances in infancy, the so-called exudative diathesis, where there are eczematous outbreaks with recurrent gastrointestinal disturbances and consequent malnutrition. These cases are early recognized as the lymphatic type of child in whom the lymphatic glands enlarge readily, the post-nasal adenoid vegetations become hypertrophied, and the tonsils are oversize. This type of child is attacked by upper respiratory infections which cause mucosal changes in the nose, throat and Eustachian tubes with the development of the acute earache of childhood.

These cases of acute earache in childhood furnish a very interesting and important chapter in this topic but we can only stop sufficiently long to utter warning. *Earache in childhood is not, as is almost universally accepted, one of the necessary evils of childhood but rather a poignant danger signal calling attention to ears and the upper respiratory tract.* Because the earache subsides in a few hours or days is not an indicative that the storm is over. The acute distressing symptoms have disappeared but you do not know what changes are quietly taking place in the drum and middle ear structures. In many instances no attempt is made to find out. Without question, right here do we have the very beginning of many of the catarrhal changes in the middle ear, of a slowly progressive character, which, in years to come, will markedly reduce the hearing. We regard then recurring earache in children, with or without discharge, as ample evidence of serious ear changes and calling for expert investigation.

High Tension in Pregnancy.—King (*Ohio State Eclectic Medical Association*, Sept., 1923), concludes his interesting article as follows: I. A series of blood-pressure readings, properly taken, serves as an index of the eclamptic or non-eclamptic condition of the patient.

2. The average blood-pressure during pregnancy is about 115, and if the blood-pressure is below 100, be prepared for shock; if above 150 it is no longer to be regarded as normal.

3. A moderately high blood-pressure which shows no tendency to mount and is not accompanied by symptoms of eclampsia, is not necessarily serious.

4. A blood-pressure, even if low and unaccompanied by symptoms of eclampsia, but does show a tendency to rise, should be regarded as suspicious.

5. A gradual rise in blood-pressure takes place thruout pregnancy, not simply during the last months of pregnancy and during labor. After delivery a return to the low level takes place.

The Importance of Fruits in the Dietary.—Some fruits contain quite large quantities of vitamines. Oranges, lemons and grapefruit are especially rich in this mysterious substance, which tends so powerfully to keep the body in a state of well-being; while apples, pears, peaches and prunes show large percentages of vitamines. Even dried fruits will provide the body with these vitamines, for the element is not lost in the process of drying and packing.

This good element of fruits must not be misunderstood as possessing energy-making materials. One cannot make a meal on fruit and expect to do a hard day's work on it, for it has no driving power.

People who enjoy fruits will now have the satisfaction of knowing that their craving is a natural requirement of their bodies, and they should continue to indulge themselves; while those who do not care for fruits might find themselves very greatly benefited if they would form the habit of eating some vitamin-containing fruit every day.

The Nose.—Prof. J. Lorrain Smith, writing in the *Medical Press and Circular* (August 1, 1923), maintains that the nose is one of the "gateways of health and happiness", and upon its proper functioning depend both physical and mental efficiency. Lavater thus describes "the perfectly beautiful nose":

"Its length should equal the length of the forehead. At the top should be a gentle indenting. Viewed in front, the back should be broad, and nearly parallel, yet above the center something broader. The button or end of the nose must be neither hard nor fleshy, and its under outline must be remarkably definite, well delineated, neither pointed nor very broad—." How many noses of this type does one see nowadays? Bony malformations have almost abolished them and our friends the nasal surgeons dance gaily down their pleasant path strewn with nasal septa, fragments of turbinates and guineas! One has merely to note carefully the marked difference between the noses of the young people of the present generation and those of persons of a couple of generations ago, as displayed in photographs or pictures of that period, to observe what is happening to this organ. How do these bony malformations arise and how

are they to be prevented? Careful study of a number of those plaster casts which most dentists have in their possession will prove interesting and instructive. It will reveal in the first place that, on the whole, the most edentulous of the jaws are also the most V, or "adenoid" shaped; this, as will be shown later, is undoubtedly not a coincidence; secondly, it will be observed how great are the crowding, and consequent overlapping and mal-position, of those teeth which remain in these V-shaped jaws; it will further be seen that both jaws, but especially the upper, appear to have been laterally compressed and that the palates are highly arched; it seems obvious that the cartilaginous septum must bend before the upward pressure of the palate and that thus are the majority of deflected septa probably produced; all these malformations occur in bones which are imperfectly developed or are, in other words, *ricketty*, whereby hangs a *dietetic* tale; at any rate, non-traumatic septal deformity is absolutely unknown among wild animals in a state of nature and among savages, and is exceedingly rare in semi-civilized races. Trauma is, of course, the cause of many deflected septa and some authorities consider the pressure to which the nose is sometimes subjected during birth to be the cause in some cases.

If the external configuration of the nose is esthetically important, how much more so is the internal body development *vital*, not merely for mental and physical efficiency, but for the due enjoyment of the fundamental pleasures of existence; unimpaired olfactory function is essential, not only for the efficient stimulation of the appetite for food, but also for adequate reflex stimulation of the digestive processes thru the senses of taste and smell, the former of which is largely dependent for its proper functioning upon the integrity of the latter. The victims of chronic nasal catarrh never properly taste their food, and the dyspeptic symptoms from which they invariably suffer are doubtless due to this fact as well as to the direct infection of the gastric mucous membrane which always occurs in such cases.

The Drinking of Hot Water a Valuable Health Measure.—Many know but few think of drinking hot water, states a writer in the *Critic and Guide* (August, 1923), which is a very important factor in the improvement of health and the prevention of disease.

It dissolves and removes from the body waste matter of all kinds, the retention of which would be liable to set up chronic rheumatic and gouty conditions.

It would be well to take one pint and a half two hours before breakfast, and another pint one hour before dinner and supper.

It is an advantage if a little alkali, say, bicarbonate of soda, and perhaps a little common salt, be added to the water, because most of the waste matters are acid, and the addition of the alkali assists in their solution.



Don'ts.—Do not let your engine labor up a hill. Gears were made for occasional changing, or shifting.

Do not attempt adjustments on your car that you are not familiar with. They cost real money later on.

Do not forget that rattles and squeaks call for a wrench and oil.

Do not turn corners too quickly at the cost of your tires.

Do not overlook the fact that a clean engine and pan lessen chance of fire.

Do not let your car stand in puddles of water or oil. Neither one is good for your tires.

Do not forget that your spare tire needs air also, when inflating your tires.

Danger While Filling Auto Tanks With Gasoline.—So many deaths and serious injuries have occurred recently from static electricity generated during the filling of automobile tanks with gasoline that W. E. Mallalieu, general manager of the National Board of Fire Underwriters, has issued the following:

"While flowing thru hose such as is customarily used by filling stations and supply trucks," said Mr. Mallalieu, "gasoline generates static electricity from the friction incident to its passage. The electrical charge in the hose attempts to escape and in doing so will jump a fair-sized gap to the nearest metal surface, thus creating a spark."

"Recently, a number of people have lost their lives and others have been badly burned while seated in automobiles whose gasoline supply was being replenished, because, in each case, such static sparks have ignited the gasoline vapor escaping at the mouth of the tank; in several instances explosions have followed."

"Tragedies of this kind may be easily avoided however, by making sure that the nozzle of the hose is in continuous contact with the unpainted mouth of the tank. With tank trucks, the additional precaution of a grounding chain should always be employed." The menace above referred to is one that is so important that a number of the automobile and science publications have recently discussed the subject in detail, pointing out not only that the utmost care should be taken in filling automobile tanks, but definite precautions employed to obviate the specific danger, and to accomplish this a ground should be used as Mr. Mallalieu suggests in connection with tank trucks. A small chain which can be temporarily looped over one of the rear springs and dropped down to the ground meets every requirement, and

some garages have such a chain fastened to an iron pipe sunk into the ground and make a routine practice of passing it over the nearest spring of a car every time they fill an automobile tank with gasoline. Altho the development of a spark and ignition of the gasoline vapor is not a common occurrence, it does take place often enough to justify the use of the foregoing simple method of prevention as a uniform procedure.

Hints.—Extra tires not in use on the car should be stored in a cool, dry, dark place.

Those carried as "spares", should be properly covered against the elements.

Oil and gasoline are natural enemies to rubber, so see that your spares on the rear are not spattered with oil or gasoline on filling the tank. If so, wipe off immediately.

The steering gear needs attention and lubrication almost as often as other parts of your car.

Too much play in the wheel sometimes leads to play in connecting rod, wobbly wheels, excessive wear on tires and not infrequently accident.

A wheel that works too hard on turning, needs lubrication.

Look to your wheel, whenever you start out is a splended rule. The spring leaves of an automobile slide on one another, squeak and bring about undue wear when not properly lubricated. There are several methods of relieving the above conditions.

1. The use of a spring spreader and grease applied between spring leaves.

2. A more simple way would be to apply cylinder oil or rust preventive (a preparation so called is on the market) to the outer surfaces with a stiff brush.

Foil the Auto Thief.—One of the most effective means of foiling the auto thief is to cover the air vent in the gasoline cap with chewing gum whenever leaving the car. This upsets the vacuum system and means that when the vacuum tank runs dry, the car will stop for want of gas.

Not caring to look for further trouble, the thief will promptly abandon the car not far from where he found it.

The Use of the Hand Throttle.—The best time to use the hand throttle is over a rough road. The control from the hand throttle is more gradual and the rough surface of the road does not occasion periodic racing of the engine.

The glare from the headlights of an approaching car may be caused by your own dusty windshield. Keep your windshield clear both outside and inside.

Holding small pieces or parts when screwing together, tightening, or adjusting when one has no vise is sometimes a problem. The use of your "monkey wrench" then comes in handy and leaves one hand free.

The Stealing of Cars in the United States.—According to the *American Auto Digest*, more automobiles were stolen in the United States in 1922 than all the cars registered in most of the nations of Europe, amounting in value to about \$100,000,000.

The present estimated value of motor vehicles in this country is approximately \$9,000,000.

In the state of Wisconsin alone there is invested approximately \$410,000,000 in automobiles.

Switzerland boasts of 20,000 passenger automobiles.



New Magazine in Health Field.—In an attractive new dress, in a more compact and readable form, with its value enhanced by the dignity of print, the most recent number of *Venereal Disease Information*, a monthly publication issued by the United States Public Health Service at Washington, has just come from the press.

This magazine, as the name indicates, is intended primarily for health officers, physicians, nurses and social workers engaged in venereal disease control activities. The present issue contains several special articles, noteworthy among which is one on general paresis. The bulk of the magazine, however, in conformity with the custom established in previous mimeographed issues, is composed of brief abstracts of articles dealing with venereal diseases which have appeared in current publications, both foreign and domestic. The contents is divided into six sections under the heads of special articles, research, diagnosis, treatment, clinical notes, and public health and administrative notes.

For some time past this information has been furnished State health departments, venereal disease clinicians, hospital libraries, medical society libraries, medical school libraries, medical journals, public health nurses' associations, training schools for nurses, social service agencies and other organizations in the form of mimeographed monthly abstracts. The wide use made of the information contained in these abstracts and their popularity so impressed the Public Health Service with

the desirability of presenting the information in a more readable form that the new publication is the result.

The subscription price for this new periodical is 50c per year payable to the Superintendent of Documents, Government Printing Office, Washington, D. C. The number of subscriptions already received from members of the medical profession would indicate that the more permanent form in which this information is now appearing meets with the approval of the group for whom the publication is designed.

Chicago Menaced by Goitre.—It has been conservatively estimated that Chicago has 200,000 persons suffering from preventable goitre, the greatest number of cases occurring in persons between the ages of birth and sixteen years. Seventy-five per cent. of goitre is among school children.

Dr. McGrath Back from Cancer Study Abroad.—Dr. John J. McGrath, president of Bellevue and the Allied Hospitals and also a visiting surgeon at these institutions, returned from Germany on the Resolute of the United American Lines after spending two months at clinics in Hamburg, Berlin, Frankfort and Leipzig. Dr. McGrath said that his object was to study the advances accomplished by notable German physicians in the treatment of cancer. It is planned to establish at Bellevue Hospital a department of radio therapy where the most modern methods of treatment of cancer by the X-ray and radium will be installed so that sufferers from this disease who apply at Bellevue and the Allied Hospitals, especially those without means to pay for private treatment, may receive the benefits of free treatment. Dr. Arthur S. Unger of 35 West Seventy-fifth Street, who has successfully treated cancer with X-ray and radium, accompanied Dr. McGrath on his trip to Germany and returned with him on the Resolute.

Dr. Mayo Predicts Longer Life Span.—The average life of the human being has been prolonged from twelve to fifteen years as a result of recent advances in medicine and surgery, Dr. Charles H. Mayo of Rochester, Minn., declared at the meeting of the Manitoba branch of the American College of Surgeons. Dr. Mayo predicted progress already made would be surpassed in the years to come. He emphasizes the need of education as the prime requisite in the battle against disease.

Eye Clinics Save Sight of Children.—The Bureau of Child Hygiene operates ten eye clinics which gave 85,000 treatments to 25,000 school children last year, the health department reports. This included 10,000 examina-

tions and treatments at sight conservation clinics to candidates for sight conservation classes. In 1922, 36,000 refractions were performed by ten oculists, who wrote 11,000 prescriptions for glasses. Much refraction on mentally backward and very young children is done by skiascopy or the shadow-test.

Priestley Medal Awarded.—At the annual meeting of the *American Chemical Society at Milwaukee*, September 12, the Priestley Medal, awarded triannually by the society for distinguished services to chemistry, was bestowed on Dr. Ira Remsen, president and professor emeritus of Johns Hopkins University, Baltimore, at ceremonies at Marquette University. Dr. Remsen, who is 77 years of age, is editor of the *American Chemical Journal* and a past president of the American Chemical Society.

Cripples in New York City.—The New York Society for the Relief of the Ruptured and Crippled has recently completed a survey of the city. It was found that New York has in all about thirty-six thousand crippled persons. About fifty per cent. of these are less than sixteen years old, and about sixty-three per cent. became crippled before reaching that age. Nearly one-half of the cases discovered by the field canvass are not being treated; about 3,700 cases have been diagnosed but have stopped attending clinics; over fifty per cent. of the cripples are not known to any agency. It was found that there are available enough operative beds and sufficient clinical facilities, but that the number of convalescent and custodial beds is too small. Very few crippled children are attending school.

Italians Claim Scarlet Fever Germ Discovery.—The cause of scarlet fever has been discovered according to claims of Italian investigators in reports that have reached the American Medical Association. In 1921 Prof. G. di Cristina of the University of Palermo isolated from scarlet fever patients a small double-celled microorganism that can exist without oxygen. Now Prof. G. Caronia and Dr. M. B. Sindoni at Rome have confirmed his work and assert that the organism causes the disease. By inoculating first rabbits and then children with cultures of the organism they claim to have produced scarlet fever experimentally.

Officials of the American Medical Association point out that other investigators have claimed from time to time without general acceptance the discovery of organisms presumed to cause scarlet fever. Altho the Italian evidence is more extensive than any yet offered, they point out that more experience and investigation will be required before these claims can be fully accepted.

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Police and the Prevention of Delinquency.—The socialization of the police force is a definite movement which is manifest thruout the world. The general courtesy and efficiency of the London "Bobby," the activities of Scotland Yards, result in part from their entirely impersonal relation to the community they serve. The nature of the activities of the Metropolitan police in large cities of this country indicates a large degree of vision of chiefs of police. Their functions are no longer limited to the mere control of violations of law, but extend in various directions and tend to prevent delinquencies and criminalities.

In the *Journal of the American Institute of Criminal Law and Criminology*, August Vollmer, chief of police of Los Angeles, Calif., and one of the foremost exponents of modern police organization, discusses "predelinquency." He freely acknowledges that delinquency is not the result of a single misstep, but is an accumulation of failures on the part of the individual to conform to the regulations of the home, the school and the community. He, therefore, seeks to find some means to check crime in its incipiency. Hence, he believes in efforts to attack the problem among children before their habits are so firmly fixed that it is too late to overcome tendencies to wrongdoing.

"Among the children in our schools today are to be found the gangsters, thugs and murderers of tomorrow and, inasmuch as we have had pointed out to us by sci-

tific studies and our own observations that the majority of our professional crooks were troublesome children long before they became criminals, it behooves the policeman to concentrate his attention upon the problem child during the predelinquent period. We cannot expect to undo the follies of past generations in a few years of careful training, nor perform such miracles as furnish intelligence to an imbecile, but we can help every child by securing for him the environment best adapted for the development of his potentialities, after carefully considering his intelligence, temperament, physical and mental health, aptitudes, tendencies, tastes, habits, disposition and abilities. Be it remembered, however, that not all problem children become habitual criminals, but it is from their ranks that they, our social misfits, are largely recruited."

In accordance with this fundamental point of view, he advocates definite cooperation between the police and the teacher, with their common meeting ground at the school. Confidential information is to be furnished by teachers, principals and superintendents so that a knowledge of the early trends and habits of children may be under definite organization, leading to the compilation of facts concerning troublesome, immoral, pugnacious, light-fingered children, the mental defectives, the truants, etc. On the basis of this information the police should be in a position to become acquainted with the special factors underlying the individual child's incapacity for

successful living in his environment. Here, then, is the entrance of the cooperating physician and psychiatrist, the health clinics, mental hygiene clinics, psychologic clearing houses, and bureaus of research in behavior in child welfare. On the basis of the cooperation of these various agencies, a definite report, with recommendations, is to be provided to aid the community in lessening the likelihood of potential delinquents becoming permanent failures as citizens and possibly social outcasts.

It is interesting to note that the trends of social welfare, medicine, psychology and education are so frankly recognized and grasped by the head of a police force, who is generally viewed as an unsympathetic individual, merely bent upon catching criminals violating law, or protecting the innocent public from aggressive felonious characters. If, too, the strong hand of the law, as measured by police activity, is willing to seize upon the rational procedure advocated for decreasing juvenile delinquency, it becomes patent that the advance in public law and order will soon be conditioned, not on the basis of deterrent punishments, but upon the exhibition of intelligent investigation, for the purpose of decreasing the need for the most active services of the police. The gradual filtering of preventive ideas into all strata of human effort promises much for the future. It represents a normal development of the consciousness of communal suffering that may be prevented, with an increase of communal sympathy and understanding.

It is interesting to contemplate the police forces of the country engaged actively in promoting the physical, mental and moral welfare of the community, along the lines that thus far have been accepted by only the more advanced group of thinkers in

psychology and public welfare administration.

Health and Economic Status.—In considering the general health of the community greatest stress is placed upon improvements in sanitation and public health administration, together with the advances in public health education. It is not improbable that a considerable degree of improvement in familial health since the war time may be attributed to altered economic conditions. While the prices of commodities are far above the pre-war basis, and the cost of living remains high, the country, as a whole, is in an era of relative prosperity, at present, due to high wages, and a comparative freedom from unemployment. Despite industrial difficulties arising from labor disputes, the general levels of employment are exceedingly high.

The Industrial Bulletin, September, 1923, issued by the Industrial Commissioner of New York State, indicates that the index number of the cost of living in the United States was 169.7 in June, 1913, using as the base the average cost of living during the year 1913. The retail price of food in June, 1923, was 145. The element of greatest expense entering into the cost of living is the factor of rent. Taking New York State as an illustration, the average weekly earning in June, 1923, was \$27.87, as compared with \$12.70 in June, 1914. The factory pay-rolls in New York State had an index number of 244 in June, 1923, as compared with 100 in June, 1914, with a factory employment of 110, as compared with 100 at the same relative periods.

It is obvious, therefore, that the standard of wages at the present time is such as to provide a marked favorable difference be-

tween the weekly income and the weekly liability to meet the necessities of life. While average weekly earnings do not accurately indicate the actual state of the annual income, the relative constancy of the increase of income over that of the cost of living demonstrates the economic advance now possessed by the workers in shops and factories. The high wages of carpenters, plumbers, bricklayers and similar workers make their annual incomes, even with periods of seasonal unemployment, far greater than during the pre-war period, not merely in the gross amount, but in relation to living costs. Hence there is an economic improvement in the status of families, owing to the availability of larger amounts of money, which are not completely absorbed by reason of increased costs of food, rent, clothing, transportation charges and similar necessities of life.

The minimum annual income essential for the protection of health and comfort obviously has increased materially, but there is at least a residuum of funds for the building up of savings accounts, for investment in homes, and for improving the amount and character of foods and clothing to meet home demands. The effect is further evidenced in the change of home ownerships in 1920, as compared with 1910. While in 1910, 45.8 per cent. of families owned their own homes in the United States, in 1920 the percentage was only 45.6. If, however, one picks out distinctively industrial communities, one notes favorable evidences of increasing ownership. Thus one finds, for example, marked increases in the percentage of families owning their own homes in Birmingham, Ala., Boston, Bridgeport, Buffalo, Camden, Chicago, Denver, Fall River, Grand Rapids, Kansas City, Kan., Minneapolis, Nashville, Paterson, Philadelphia, Pittsburgh, Port-

land, Ore., Reading, Pa., St. Paul, Minn., Seattle, Wash., Toledo and Youngstown, Ohio, among the cities of 100,000 or more inhabitants.

There is reason to believe that the quality of homes has improved, because of the greater financial security of the working group. This involves more leisure for recreation, a larger variety of food, as well as an increased quantity of it, a better grade of clothing, larger educational opportunities for children, and earlier attention to the medical and dental requirements of the family.

It is impossible to determine the definite influence of this improvement in economic status upon the general health rate of the community. It is important, however, to appreciate the health protective value of financial independence. While disease is responsible for a considerable degree of familial distress, incident to lack of earning capacity, it is equally true that an income reasonably above the borderline of financial dependence lessens the danger of disease. There is a more or less reciprocal relation existent, which is not to be overlooked in weighing the elements productive of communal health. Large incomes cannot protect families against epidemic diseases, but they do serve to maintain adequate nutrition, freedom from anxiety and discontent, which are admittedly subversive of the vital functioning.

There is health inherent in an era of high wages, so long as they are definitely considerably above the actual average cost of living. The savings bank reserve carries over from the dollar and cents value to an actual health value.

Testing Hyperthyroidism.—The recognition of hyperthyroidism has called forth

a large number of clinical diagnostic tests, many of which depend upon an elaborate laboratory technic. The Goetsch test and basal metabolism test are still under discussion on the grounds of their reliability, and the latter involves so many elements of error that it is not to be regarded as thoroly dependable.

Among the new tests of a rather simple character is the quinine test, proposed by I. Bram, discussion of which is found in the *New York Medical Journal and Medical Record*, September 19, 1923. The basis of this test is the observation that subjects of thyroid toxemia are exceptionally tolerant to the physiologic effects of quinine during the course of the disease and for a long time after recovery. Bram regards this tolerance as tantamount to the exhibition of an immunity. The value of the test naturally must depend upon the percentage of people who are free from hyperthyroidism, and who are at the same time susceptible to cinchonism. While it is probably true that few normal persons can take more than from ten to twenty grains of quinine without symptoms, there is a moderate degree of tolerance among individuals suffering from malaria, pneumonia, tonsillitis, and other infectious processes. This, however, is usually a temporary tolerance and not to be regarded as a state of natural immunity. Such temporary states are readily determined and, in consequence, should not interfere with the reliability of quinine tests in hyperthyroidism, if further experience indicates its reliability otherwise.

The technic of the test as laid down by Bram is as follows: "The patient is given a dozen capsules, each containing ten grains of the hydrobromide of quinine, with instructions to take one capsule four times a day, to be washed down by an ample quan-

tiny of lukewarm water, an hour or two after meals and at bedtime. By the time thirty, forty or fifty grains have been taken by persons whose thyroid function is not excessive, there develops a sense of fulness in the head, impaired hearing, with tinnitus, often dizziness and headache, and occasionally a feeling of slight gastric and bladder discomfort. Persons possessing a degree of susceptibility or idiosyncrasy will experience these symptoms after the first or second capsule, while those to a degree tolerant may not complain until sixty to one hundred grains have been taken. In the presence of a hyperactive thyroid, no symptoms develop from the daily administration of quinine hydrobromide, even if given during a period of weeks or months; on the contrary, improvement in the syndrome is frequently observed."

The quinine test, when positive, merely indicates hyperthyroidism, but does not serve to distinguish a toxic adenoma from Graves' disease. If, however, it is adequate to differentiate hyperthyroidism as a functional state from all other symptom-complexes leading to a questioning of thyroid function, it possesses a wide sphere of usefulness.

From the standpoint of clinical medicine, the quinine test would appear to be freest from difficulty and worthy of trial, by reason of its inexpensiveness, harmlessness and simplicity. It is too early to determine its actual reliability, but there is every reason why it should be given a wide trial in order to secure the data upon which to base a further opinion. So many tests are constantly proposed for the determination of function that a certain degree of suspicion attaches to each one that is put forth. At the same time it is only by a trial of the test upon a wide scale that accurate knowledge can be secured as to its

accuracy and reliability. The exact place of the quinine test for hyperthyroidism cannot be determined until clinicians thruout the country or world have given it a trial and have compiled their observations and results in formal reports. After all, medical technic grows thru the conviction of clinicians, on the basis of experience, of the superior worth of individual methods of diagnosis, particularly when they are not based upon any definite, explainable, physiologic foundation.

Why hyperthyroidism should be evidenced by tolerance of quinine is beyond understanding. If, however, this should prove to be the fact, a reason will undoubtedly be supplied by more intensive chemical study of the thyroid gland in the circulation.

Prenatal Care and the Midwife.—Discussing the midwife problem in the *Journal of the American Medical Association*, September 22, 1923, Dr. Anna E. Rude, Director, Maternal and Infant Hygiene, U. S. Children's Bureau, points out that almost one-half of the states in the Union have already undertaken the supervision and training of the midwife. This suggests that from the standpoint of public health administration the control of the midwife appears to be a necessity and is preferable to ignoring her existence. Existing legislation apparently recognizes the midwife, but has not established effectual control of her practice. There is reason to believe that effective administrative control of midwifery, based upon adequate standards of training and experience, tends to reduce the number of midwives in the community, while at the same time it raises the standards of practice. There are, at present, in thirty states from which figures are available, approximately 45,000 mid-

wives. The percentage of births attended by them varies from 48 in Mississippi to two in Nebraska. In ten states the number of midwives is sufficiently large to warrant the employment of a supervisor, and eighteen state health departments have taken the position that trained, licensed and supervised midwives should be provided for rural communities.

While physicians, as a group, appear to demand the elimination of midwives, it is patent that their elimination is not to be secured without making available qualified substitutes. The advance in maternity service thruout the country is being expedited by the extension of hospital care and by the organization of clinics in which antenatal care is given with advice concerning the numerous incidents of pregnancy, and the guidance required for producing the best type of obstetrical attention.

In the same issue of the journal referred to, Adair and Maland, of Minneapolis, present the "Results Gained in Maternity Cases in Which Ante-natal Care Has Been Given." There is evidence of a marked decrease in the attendance of physicians and midwives upon lying-in mothers in the homes. The midwives have suffered an absolute and relative decrease of service. Physicians have had an absolute decrease of deliveries in the homes, but have had a relative increase of their services in comparison with the decline of attention by midwives. Their tabulation of the accomplishments of proper prenatal care and supervision is as follows:

- "1. The reduction of sterility by securing proper care for mothers, and the consequent reduction of infection.
- "2. The lessening of the number of abortions.
- "3. The diminution in the number of premature deliveries.

"4. The reduction of the number of stillbirths.

"5. The saving of infant life during the neonatal period.

"6. The saving of the health of the mothers.

"7. The virtual elimination of maternal deaths from toxemia and infection by proper instruction, supervision, preparation and treatment of mothers during the periods of gestation, parturition and the puerperium."

These results are significant and suggest that the problem of midwives is largely bound up in a consideration of obstetrics practiced in accordance with modern ideas of prenatal service. The public health nurses, the physicians, health centers, baby welfare stations, municipal training and licensure of midwives, with lying-in centers, bring about an education of the people as to what constitutes the highest type of obstetrical attention.

The midwife is not essentially an economic problem, even tho this plays an important part, but is bound up in racial traditions and the larger degree of personal service that the midwife offers, as compared with the obstetrician. The supervision of pregnancy, the education of pregnant women, the establishment of adequate obstetrical facilities, the enlargement of opportunities for district nursing provide definite measures that will in time tend to solve the obstetrical problem.

It is impossible to say whether or not the midwife is doomed to disappearance, but it is patent that the obstetrical specialist is not to offer the practical solution of the problem. The obstetrician will be called upon for the management of abnormal conditions, and his advice will be valuable in an advisory capacity at clinics for prenatal work. The bulk of obstetrical care for many years to come will fall upon the

family physician and the midwife. The maternity clinic serves as a meeting ground for mothers, physicians, midwives, specialists and nurses. It provides continuous guidance and possesses a real opportunity for conserving maternal health and protecting the earliest period of infancy.

The obstetrical problems in the country vary considerably in urban and rural communities and are affected by the dominance of special nationalities in the population. Patently, no single program can be made effective in reaching all elements in the rural and urban population. It is important to recognize, therefore, the various types of programs that have been inaugurated by municipal and state departments. They cannot be criticized in terms of their universal applicability, but require evaluation in terms of their effectiveness and results within the communities they aim to serve. Frequently the plans presented by obstetricians are based upon the theory that only specialists can meet the needs of the country if excellent obstetrical attention is the end in view. Any tendency to accept this academic solution would be checked at once by the lack of obstetrical specialists in sufficient numbers to cope with the situation.

The experience of continental nations has fully demonstrated the capacity and ability of the trained, licensed midwife to satisfy most of the conditions attendant upon normal childbirth. With adequate supervision and highly-trained advisors, the midwives of England, Germany and the Scandinavian countries have demonstrated an undeniable usefulness. The weakness of the midwife problem in the United States has arisen mainly from ignoring the midwife or manifesting indifference to her existence. Whenever due recognition has been given her, and she has achieved an eligible status, there has been an advance in the grade of

her services, and with education properly fostered the number of ignorant midwives has steadily decreased, owing to the standards exacted for licensure.

The introduction of the maternity clinic has served somewhat to decrease in large cities obstetrical service by midwives, but the development of antenatal work has not been sufficiently extensive to indicate its ultimate effect upon either midwives or physicians. Obviously, antenatal work, by means of the public health nurse and the maternity clinic, affords the best means of transforming obstetrical practice, so as to safeguard women and infants, regardless of whether the midwife is eliminated or home deliveries are decreased. And, after all, the test of obstetrical service lies not in theories as to who should preside at the hour of birth, but as to what the effects of service are upon maternal health and the safe arrival of unharmed infants into the world.

Public and Private Physicians.—The fifty-second meeting of the American Public Health Association, at Boston, indicated the wide variety of subjects which are regarded as essential to the development of the public health program. The various sections included public health administration, laboratory, industry, hygiene, vital statistics, food and drugs, sanitary engineering, health education and publicity, and public health nursing. The variety in sessions thus indicated evidences the breadth of the material considered.

Public health training for doctors and nurses, discussions of mosquitoes, bathing places, food inspection, tuberculosis surveys, refuse collection and disposal, standardization of school medical inspection, the distribution and menace of organic heart

disease, clinical effects of so-called "moonshine liquors," the relation of the public health nurse to the practicing physician, longevity promotion, experimental examinations on the etiology of common colds, the Schick test, problems in nutrition and housing, the economics of health supervision in industry, venereal diseases, lead poisoning, the crippled child, and epidemiologic service represent but a fraction of the specific problems that were considered.

The mixture of subjects points out the relation of individual welfare to communal health and suggests the course of thought which is engaging the attention of public health workers. The list of subjects is worthy of the consideration of private physicians, because it demonstrates the lines of preventive plans which are bound to take cognizance of the practicing physician, in order to secure the maximum effectiveness.

There still remains in the United States a considerable proportion of the medical profession which apparently is out of sympathy with the efforts of public health administrators. Acting under the wide police powers conferred upon health officers, municipal and state health departments are authorized to undertake the official control and management of individuals and homes, which they regard as a menace to the community. This wide authority is seldom employed because it is better policy and wiser administration to work in harmony with the medical profession at large.

There is too much of an attitude of resentment against the system of public health administration in the belief that it encroaches upon the rights and privileges of physicians. The fear is unwarranted in facts and the extension of public health opportunities actually redounds to the advantage of the private physician. Public

health service, with its corps of physicians and nurses, stands as a firm bulwark of medicine, as opposed to the alleged advantages of pseudo-scientific cults and fantastic sectarian practices. Its efforts constantly reveal the need for a larger degree of medical service and bring about an actual enlargement of the opportunities of physicians to remedy defects and handicaps which previously had been deemed of minor consequence. The constant plea for annual physical examinations and the stress placed upon the importance of health conservation provide a new sphere of usefulness for physicians, which many fail to recognize because of a lack of appreciation of the underlying purpose of preventive medicine, as at present constituted, thru its official administrators.

A closer degree of cooperation between physicians and health officials is essential. A larger degree of understanding, cooperation and professional courtesy will go far towards promoting a type of service that will benefit communities, aid physicians to offer a higher type of professional work, and facilitate the effective efforts of public health officers. While it is true that there appears to be a larger degree of centralization in medical effort, this obtains merely for purposes of supervision and control. There is no desire to handicap the professional service of physicians in private practice. When the medical profession comes to a full realization of the assistance offered by health departments and the advantages that may be derived by more adequate utilization of the assistance of the diagnosticians, inspectors and public health nurses, physicians will find little reason for apprehension concerning the invasion of their special territory. The growth of a feeling of confidence and faith in the sin-

cerity and honesty of public health workers is requisite. Public health work in its broadest aspect reaches its highest accomplishments only with the support, counsel and cooperation of the practicing physician, whose potential service forms the background of medical attention in the home.

It must be borne in mind that the relation of public health to the personal human factor has achieved recognition for but a comparatively few years. Only forty years have elapsed since Koch discovered the bacillus of tuberculosis and less than thirty-five years have elapsed since the first Infectious Disease Notification Act was passed in England. And public health nursing, as such, has barely arrived at the end of its first generation of effort. Hence, while fifty-two years have passed since the American Public Health Association was established, the stress upon homes, families and individuals may be said to date back less than thirty years. It is natural, therefore, that the varying degrees of emphasis upon this phase of public health work should have created many questions for discussions. It has not been unnatural that many occasions for dissatisfaction, discontent and disapproval should arise during a period of transition from a plane of public health work that dealt merely with garbage and refuse and large sanitary problems, to the individual examination of infants and children, school nursing, maternity clinics, and special public agencies for the treatment of venereal diseases, mental disorders and the general problems of education and hygiene.

The solution of any frictional problems that now exist is to be found in mutual efforts at understanding by physicians and their constituted health authorities. There is no element of compromise involved, but

a definite need for frank discussion and for an earnest effort for a thoro understanding of the common interests involved and the mutual benefits to be derived from working together harmoniously.

Birth Rates and Racial Stock.—*The Seventh Annual Report on Birth Statistics*, published by the Bureau of the Census, considers the natal facts of the birth registration area of the United States for 1921. This area now contains 65.3 per cent. of the population of the United States and is composed of twenty-seven states and the District of Columbia. In this area during 1921 the birth rate was 24.3 per thousand population, with the proportion of children born, 1,059 males to 1,000 females.

This slight excess of male births is more than wiped out in the early mortality rate of infants, for during the same year the deaths of infants under one year of age evidenced a proportion of 1,314 males to 1,000 females. In general, it would be said that male births exceed the number of female births, altho there appears to be no tenable theory to account for this fact. By many it has been believed that wars and epidemics are followed by increases of masculinity of living births. The actual accumulation of data, however, would indicate a lack of sufficient material to justify this conclusion, despite the fact that it continues to exist as a tradition. Nor is it possible to interpret the evidence from foreign countries as sustaining this conjectural, intangible relation, when consideration is given to the sex of stillbirths, as well as living births.

In comparing the size of families, it is interesting to note that the average number of children ever born to the mother of 1921,

and the average number of these children now living were, respectively, 3.3 and 2.9, for all white mothers. When considering the variations in the countries of birth of mothers, distinct variations are found. The white mothers born in the United States have an average of three children, while foreign-born mothers have four. It is striking that the English stock averages three, whereas the Austrian and German average 4.3, Italian 4.4, and Polish 4.6. It is evident that foreign-born stock reproduces more extensively than do native American or English stocks. Nor is this reproduction cut down very extensively by very greatly increased mortality rates among the foreign born, so that the general increase of the American population is definitely away from the traditional Anglo-Saxon stock, so thoroly approved of by those thinking in terms of the foundations of this country.

This variation in fecundity may be illustrated by a consideration of the distribution of children in the order of birth per thousand births for white mothers. During 1921, 328.2 of each of the births to American-born mothers were first children, as compared with 200.4 for all the foreign-born mothers. A special contrast is noted in the rate of 107 first children for Polish mothers, 143.9 for Austrian mothers, 157.5 for Hungarian mothers, and 323.3 for mothers born in England, Scotland and Wales.

There is, thus, ample evidence of the comparatively small families that are being raised by our native population. This fact merits consideration in formulating plans for giving adequate care to the infant population if one is to project the educational work where it will be of the greatest service. It clearly indicates, also, that the complexion of American citizenship is under-

going a marked alteration in racial inheritances. The difference in mortality rates of children born of mothers in various countries opens many questions as to whether the discrepancies are due to racial stock, nurture, literacy, intellectual status, greater or less nervous stability, periods of breast feeding, or to entirely accidental causes. An analysis of factors such as these requires a considerable period of time, but merits the closest study.

It is frequently assumed that a low birth rate carries with it, necessarily, a low infant mortality rate. While there is undoubtedly evidence that this combination actually exists, it would not follow that the low infant mortality rate is entirely due to the altered economic conditions incident to small families. The part that nationality, education, instruction in hygiene and medico-social agencies play has not received sufficiently careful statistical study to justify the conclusions so frequently urged by those advocating family limitations. There is little doubt, however, that the mere fact of small families is conducive to better care and more adequate physical protection.

With the downward trend of child-bearing among American-born mothers it becomes highly desirable to possess more accurate statistical information concerning the elements involved in still further lowering the infant mortality rate. At the present time American stock is undergoing a marked alteration, so that the influences upon the future generations are bound up in the relative proportion of racial inheritances that are preserved thru the reduction of infant mortality, as related to the actual birth rate. The social and hygienic significance of these two items is of more than passing statistical interest. It is inevitably linked up with countless health problems in the future.



Prohibition.—Dr. Augustus J. Mitchell, police surgeon of Newark, N. J., who has had an opportunity for studying the Volstead Act in that community, has been quoted as saying, "Public drunkenness is on the increase in all centers of population." He is said to have cited figures indicating that the number of admissions of alcoholics to the Newark City Hospital has increased from 369 in 1918 to 1,958 for the first nine months of 1923; that crimes of immorality show an increase; the use of narcotics has increased 50 per cent. in this period and that cases of non-support have increased 35 per cent. since 1914.

A statement of this character is sufficiently startling to raise questions concerning the wisdom of the Volstead Act, but more particularly to rouse inquiry regarding the nature and extent of its faulty enforcement. Patently, the facts related convict Newark of being actively engaged in law-breaking, regardless of the feeling that the law is an undesirable one and should be altered so as to permit the sale of light wines and beer.

The federal prohibition enforcement authorities report that 45,000 physicians have been authorized to issue prescriptions for liquor in treatment of *bona fide* patients for whom they believe it to be indicated. They further state that with this privilege approximately one-half million patients are constantly receiving the statutory amount of liquor allowed by law, pending an alteration of the present sections governing the restriction of alcoholic medication. Considering that there are almost 150,000 physicians in the United States and that according to the American Medical Association questionnaire only 51 per cent. of them could be said to be in favor of alcohol as a useful therapeutic agent, a considerable proportion of the medical profession has abstained from the privilege of serving it as the intermediary for the distribution of alcoholic beverages. It is evident, likewise, that among the 45,000 physicians issuing special prescriptions, a considerable number appear to be violating the privilege and

authority granted them under the law.

The entire question of prohibition and its enforcement is discussed in *The Annals of the American Academy of Political and Social Science* for September, 1923. It is eminently fitting that those who wish to think clearly upon the subject should acquaint themselves with the facts propounded upon both sides of the controversy, because there is no question of greater importance before the United States than this subject. The pros and cons of prohibition, the effects of prohibition, the problem of enforcement, and the development of the struggle against alcohol thruout the world are adequately discussed by the adherents of all forms of opinion as represented by physicians, lawyers, ministers, editors, legislators, employers, employees, anti-saloon leaders, brewers, insurance men, statisticians and economists.

It would be unwise to alter legislation without a definite understanding of its actual effects upon the welfare of this nation. Nor can opinions be raised upon local experiences in single sections of the country. The effects upon the whole citizenry must be considered in the formulation of opinions. Personal sentiments, traditional opinions, or enthusiasms do not suffice as the sources of fundamental alterations in existent laws, even tho they may be distasteful to rather large minorities of citizens. The truth alone is to be served. Nor should insistent clamors, arising from sectional or special interests, overcome sound reasoning and deliberate judgment.

Seventy-five thousand people were killed by accidents in 1922 despite a variety of enactments aimed to prevent them. There is, however, no mad rush to overturn existent legislations. There are still countless preventable diseases taking a larger toll than has been ascribed to alcohol, for the restriction of which laws have not been passed. Prohibition appears to have a personal flavor, even tho there is much to be said upon the general question of sumptuary legislation and the deprivation of liberties in self-direction. This, of course, does not involve the inherent rights to use even poisons, when necessary, for the purpose of preventing illness or relieving symptoms amenable to such medication.

In order to have, therefore, a larger background for the consideration of the general problems involved in the prohibi-

tion question we advocate a rather general familiarity with the monograph dealing with "Prohibition and Its Enforcement." A reading of it will give ample occasion for careful thought and reflections upon both sides of the controversy, out of which there may grow a reasonable and intelligent opinion, whether in favor of or against existent legislation dealing with the liquor question.

The Trained Nurse Problem.—Along with the efforts of the medical profession to educate the public and to provide for installation and maintenance of public health measures, certain troublesome by-products have arisen. One of these is the training of the nurse and determination of the scope of her activities. Upon this subject much has been written in the lay press during the past few months and the nurse has been both denounced and defended.

It is becoming increasingly difficult to interest young women in taking up a nursing course, so much so that some of our hospitals are advertising in the daily papers, especially the Canadian papers, for recruits. One reason for this state of affairs is that preliminary standards have been raised every year, until at the present time many hospitals demand a college diploma or its equivalent before a candidate is admitted to training school. Again, some hospitals still require three full years of service before granting a diploma. The work is exacting, even arduous, and usually there is no pay during the training period, many hospitals providing maintenance only. Occasionally one finds a hospital which pays an "allowance" of twenty dollars a month for incidental expenses.

The training could be very much shortened and, in fact, many physicians favor less training rather than more. Roosevelt Hospital was one of the first to reduce the time to two years and the movement seems to be gaining ground. A nurse in these days has such an elaborate curriculum provided for her that she sometimes considers herself capable of diagnosing and treating disease, which, of course, is not only unlawful, but, even if it were lawful, would not be either just or agreeable to the medical profession.

Yale University, backed by the Rockefeller Foundation, is establishing an under-

graduate school of nursing, and will offer a theoretical training with the idea of giving the public the type of nurse it needs. It is questionable whether any mere theoretical course can be of any great service either to the nurse or to the public, since the nurse's work is practical, and she can only be taught by intimate contact with the needs of the sick.

As a writer recently said in the *New York Medical Week*, "An inherent talent for service coupled with sound common sense and a thoro practical training are far more likely to produce the type of woman desired, than a theoretical course that is subversive of sick-room discipline, and is impatient of the irksome physical duties which sadden the nurse but gladden the patient. Much of the theory now taught in the training schools is unnecessary, even dangerous in the assumption of medical knowledge it creates in the nurse."

For executive or community work and for public health service, post-graduate courses in nursing are offered by several institutions, notably Teachers College, Columbia University. Every nurse, no matter what her hospital training has been, who undertakes to do any of this specialized public work, such as district or industrial nursing, should by all means prepare herself by taking such courses.

With the length of hospital training must be considered the question as to how far a nurse should exercise her authority and knowledge in public health work. The district nurse in many cities seems to have made her services indispensable, and the National Public Health Association is constantly advocating that such service be expanded and made to apply to all communities as far as possible. Evidently she has come to stay, but while the nurse is a help to the physician and to the public, there is always a tendency to overstep the mark and prescribe drugs or carry out treatment which should be left entirely to the physician. Of course, the public health nurse in her new field cannot accustom herself to so many unusual conditions immediately, but her position is secure, the state and public have accepted her, and it is now up to her to work out her own salvation. The physician should be her guide in matters of medical etiquette and efficiency, and he must assume this responsibility; for, in the last

analysis, he brought her profession into being, trained the first of her kind, and needs to remember that she is a junior partner in a great, worthy enterprise, namely, the conservation of human health and life. If he fails in this, then he is open to criticism.

Is Crime Really Increasing?—Some one has said that there are three kinds of lies: the ordinary lie, perjury and statistics. The temptation to dramatize statistics is one which very few persons have the ethical integrity to resist, and, as the story told by statistics is the one the relator wishes to tell, we have the common phenomenon of the most divergent and contradictory conclusions drawn from a single set of figures. For five years now we have become accustomed to the complaint of sociologists that crime is on the increase since the war and the figures brought to bear on this conclusion have seemed quite convincing. Now at last we have an optimistic reading of the same statistics to prove that crime is actually declining. The latest contributor to this, until now, one-sided controversy is M. Louis Sadoul, counsellor of the Court of Appeals of Nancy, France, an authority on the subject of crime and a statistician whose exceptional merit is that he is interested only in the truth. After an exhaustive study of the crime statistics of a representative area of France, that comprising the four departments contiguous to Nancy, with a total population of 1,372,684 souls, and including both congested urban districts and rural areas, M. Sadoul finds that crime, since 1914, is really on the wane. The conviction that crime is increasing, it must be admitted, has been encouraged not so much by actual statistics as by what appeared to be logic: it seemed natural that the brutalities attending war should have their repercussion in civil life after the holocaust. Dismissing all theories and letting the figures speak for themselves, M. Sadoul makes out a very plausible case. In the first place, he calls attention to the fact that the population of the area examined was reduced by 14 per cent. between 1911 and 1921. If crime has merely held its own, neither increasing nor diminishing, it should likewise show a drop of 14 per

cent. Actually, in various categories, it shows an even greater decline. It has been held that the increase has been especially notable in the department of juvenile crime. Robbed of the surveillance of parents, the father being at the front and the mother too occupied with other cares, children are assumed to have succumbed to criminal influences on a larger scale than ever before. Yet the statistics deny this. In 1912, 758 minors under eighteen years of age came before the courts of the Nancy area. In 1921, 754 cases appeared, and incomplete figures for 1922 indicate that there were only 515 such cases, a reduction of more than 30 per cent. Regarding offenses of a miscellaneous nature, there were 15,088 prosecutions in 1913, and in 1921 there were only 12,249, a reduction of about 19 per cent. These figures are all the more significant, as M. Sadoul points out, in view of the fact that, since 1914, numerous laws have been passed which add to the severity of the statutes, and certain acts are listed as crimes which previously were ignored, as in the case of profiteering. If the prosecutions under the head of new statutes are discounted, as they should be for comparative purposes, the actual reduction in crime since 1913 is over 25 per cent. The figures for 1922 under the head of miscellaneous infractions of the law show an even greater reduction, the indications being that the 19 per cent. drop of the previous year will fall still further to nearly 35 per cent. Even more significant is the drop in cases under the general head of idleness: begging, vagabondage, etc., a branch in which logic would seem to indicate a large increase following the disillusionments of the war. Here the figures show that, tho there were 847 cases of this nature in 1913, in 1921 there were only 480, or a drop of 40 per cent. The familiar supposition that the soldier, having killed and become hardened to crime, would tend to become more lax in his respect of life on his return to civil activity receives the most severe blow of all, crimes of violence showing a very marked reduction, almost 50 per cent. These figures, it should be acknowledged, may not have a universal significance, and it would be hazardous to leap to hasty conclusions from them, but it would be interesting to compare them with statistics covering a similar area

in this country. Here, however, another element would enter into consideration—the effects of prohibition, which admittedly have swelled the figures in certain branches of crime.

Food and Industrial Workers.—Food, so far as the vast majority of women industrial workers are concerned, means "lunch," says the U. S. Public Health Service. What they eat in the morning and in the evening depends very largely on conditions over which some other woman has control. Taken as a whole they have very little choice.

About the only rule that can be laid down is to eat something and not to rush to work without eating anything. Hundreds of working women, mostly young girls, do this nearly every day. No boy would do it twice; he would have his breakfast or move. And in this particular, at least, girls would do well to imitate him.

At lunch, however, they may bring a cold lunch with them, have a lukewarm lunch brought to them, go home for a lunch or dinner, or eat in the cafeteria.

A "brought" lunch must be eaten somewhere. In some places and under some circumstances it can be eaten out-of-doors comfortably, without being contaminated by flies or dust. Generally, however, it must be eaten indoors, either in a room set aside for this and other purposes (such as recreation) or in the work room. To eat in the recreation room interferes with its use by those for whose benefit it was set aside. To eat in the work room prevents the complete airing that is so important after several hours of occupation; it interferes with the sweeping of the dust that has accumulated in the morning hours and that unless removed, will continue (with accumulation) to be breathed all afternoon; it exposes the food to dust that settles fast when the air is comparatively quiet and is always unwholesome and often dangerous, to the disease germs with which the air is laden, and to flies, which stay after the lunch is cleared away. These dangers are not imaginary. The weight of evidence now seems to indicate that tuberculosis (for instance) is often a "hand to mouth" disease and is carried to the lungs by way of the stomach as well as by the breath. This is particularly true of

forms of tuberculosis other than that affecting the lungs, but may also be true of pulmonary tuberculosis.

Eating in a modern factory cafeteria or in a clean restaurant is usually much the most wholesome way of getting lunch, tho of course much of its advantage may be lost by unwise choice of food. A plant cafeteria is usually well ventilated (at the beginning of the meal, anyway), is free from dust, and is screened more or less effectively against flies. The food is commonly clean and well cooked. Finally, to go to a cafeteria induces most people to wash their hands; it promotes fellowship; it gives valuable recreation; and it tends to make one cheerful.

As for food—well, one important thing is to avoid the things one gets at home. Home cooking tends to sameness and nearly always lacks some element that it ought to have. Buy something different. As a general thing hot food is best.

Meat for sedentary workers is inadvisable at lunch, unless lunch is really dinner; meat once a day is usually enough for most people. Fruit, vegetables, and salads are excellent. Pies, cream puffs, éclairs, etc., are all right in their place but should never be allowed to take the place of better foods. Sweets drug the appetite for a time but leave one hungry and often feeling faint before the day is over. A bowl of soup with crackers or bread costs about what a piece of pie and a cup of coffee does; but soup, if properly made and eaten with bread and butter will sustain and the other will not. The pie satisfies more quickly; but those who chat with somebody while they eat (and therefore eat slowly) are likely to find that the soup has satisfied them by the time they get thru; and they are practically certain to find themselves better satisfied an hour later than if they had spent the same money for frothy meringues.

For further information, write to the Surgeon General, U. S. Public Health Service, Washington, D. C., for Reprint 654: Malnutrition in children, etc.

Culture and Wages.—Europeans, who hitherto were inclined to scoff when American culture was spoken of, are now ready to concede that the arts have made such a tremendous advance in this country in the past

decade or two that the supremacy of Europe, if it still exists, cannot endure much longer and that America may soon prove to be the world's chief artistic as well as economic hope. There is good reason for this change of front regarding our cultural significance. Our freshness, youth and energy have at last found a mode of expression, after a long struggle with literary and artistic forms alien to the environment into which the founders of the country were thrust, but the long wait has had a fine, chastening effect, and the seed, conquering the somewhat barren soil, has come to a superb flowering. The result is that the capitals of Europe are now searching the American theatre for plays, reversing the habitual practice, and foreign publishers are scouring the American book field for the significant novels which are appearing with increasing frequency. In a word, our cultural importance and prestige are no longer a debatable matter abroad. We are accepted as equals by the culture-snobs of Europe, and that is an achievement for a young country. But the achievement and recognition of it comes at a very critical hour, an hour in which many things point to the danger of either a cessation of advance or even of a retrogression. The triumph, achieved so painfully and after so long an apprenticeship, may be a very brief one, for the vogue of culture, as well as the vogue of democracy, is rapidly losing favor in a topsy-turvy world. Just as in the political field, the tendency is to set the clock back, to sneer at idealism and even liberalism, to swing from the fellowship of man to the harshness of dictatorship, so in the esthetic field a persistent and poisonous skepticism has come to prevail. Italian and Spanish dictators are demonstrating (with too much success, alas) that what the masses want is not liberty but slavery, and other European governments, marching with the times, are scrapping progress and turning the leaves of history back to the middle ages. In the realm of culture, the same debacle seems to be threatening. Writers, artists, musicians, who have spent the better part of their lives acquiring the rudiments of their difficult callings and can eke only the barest living out of them, see bricklayers earning \$14 a day, lumbermen earning \$10, and unskilled labor reaping rewards out of all comparison with their own. The result is that artists,

writers and educators are abandoning their callings to take jobs as laborers; clergymen are leaving their pulpits, painters are discarding their palettes, and writers are burning their manuscripts and turning their efforts to the more profitable task of advertising. And, tho the effect on the present generation is manifest, the effect on the younger generation will be even more disastrous. Parents, who previously dreamed of profession and liberal careers for their sons, are now withdrawing them from the colleges and putting them to work at jobs where they will earn more after a brief apprenticeship than they could possibly earn after years of education. Once it was the pride of a man practicing one of the liberal professions to educate his son to succeed him. Now it is the hope of such a man to spare his son the difficulties and disillusionments of his calling and to direct his course elsewhere, along paths less thorny. The age of martyrdom is long past. We live in an era in which men measure success by the material returns and not by the questionable prospects of glory. And so long as culture is quoted as low as it is on the world market, it is doomed to fall into decay. The exchange on culture seems to be keeping pace with the German mark; it is dropping so fast that it is hardly worth quoting any longer. It is a pity that America should have at last made a place for itself on Parnassus only to find that all the good things of life are reserved for the dwellers in the valley below. We should not be astonished, therefore, if the drift of the times is away from the heights and toward the lower altitudes. When things come to such a pass that the college professor envies the privileges and prosperity of his janitor, it is high time that the world send a hurry call for an auditor to overhaul its books.

The Physician as a Publicist.—The need of physicians in public life, says a writer in a recent issue of the *New York State Journal of Medicine*, is evident. The special knowledge possessed by a physician is essential, in the deliberations of Congress, as well as in the State Assembly and the State Senate. Especially will the physician be of use in matters of health, ever present and of prime importance, as well as in the

consideration of amendments to Medical Practice Acts, and in the discussion of the claims for exemption from ability and from education made by the Vitapath, the Naturopath, the Somatopath, the Chiropractical person, and perhaps (God knows) the Pathopath, next year.

Moreover, were there thoughtful and forceful physicians in the State Assembly and the State Senate, men who would hold their heads above the mists of petty party politics, public health service would be so elevated and guarded by legislation of their initiation as to offer attraction to the highest type of trained, competent men. Such men would gladly embrace this service as a life work, were the service properly protected, were the compensation adequate, and were the tenure of office certain for the valuable man. Who can measure the benefit to the community of such a conditioning of public health service?

The qualified physician says, of course, that he has no time for public service. True, he has none. But the sacrifice must be made by some one, for the public need is great. And who is accustomed to self-sacrifice if not the medical man, whose life is one of service to others at any cost of his own comfort, his health, his strength, his possible fortune, his family life and his longevity? Such sacrifices are made deliberately, with full knowledge, devotedly, and even passionately by those who are really fitted temperamentally and by training for the life.

An Arab proverb runs as follows:

"The world is supported by four columns:
The justice of the great,
The prayer of the righteous,
The bravery of the valiant and
The science of the physician."

We have read in history, and we have seen during the span of our lives, doctors of medicine who combined greatness and righteousness and valor and scientific knowledge. Their power for good and for civic advancement was greatly enhanced by their mental grasp of human nature gained from their unavoidable study of human suffering and the human need.

For many years in our New York State Legislature there were no physicians. Hence the chairmen of the very important committees on Public Health were of necessity laymen, and the very valuable advice of an educated physician was lacking in the coun-

cils of the committees on Finance, Cities, Public Education, Labor and Industry, and Penal Institutions, in each instance of which the intimate knowledge of the family doctor would be of unusual and illuminating, and also of great economic, importance.

The great outstanding medical publicist in recent times is, of course, Rudolph Virchow, who died in 1902, aged 81 years, having achieved eminence as a pathologist, anthropologist and scholar. We all know of his great work in cellular pathology; his founding about 1847 and his editing till his death of "Virchow's Archives"; his genius for the equipment of hospital corps and ambulance squads, for management of hospital trains and for conduct of field sanitation in the German wars of 1866 and 1870-71; his success in the Sanitary Bureau in Berlin; his distinction as an archeologist of such learning as to be of advantage to the great Schliemann in this master's researches in Hisarlik and in the plains of ancient Troy; his fertility as a writer on various topics in medicine, natural history and biography.

But no less remarkable was this surprisingly industrious man in his work as a publicist and office holder. Most men would have been too absorbed in professional duties to give the commonwealth a thought. Not so Virchow. At 27 he was distinguished as an orator, when, in 1848, he espoused the cause of democracy and established a democratic club. Ten years later he was a member of the Municipal Council of Berlin and distinguished himself as a reformer of the police system of that city. At 41 he was chosen Deputy in the Prussian Diet and rapidly rose to the position of leader of the opposition to royal encroachments. As a founder of the Progressist Party and a subsequent member of the deutsche-freisinnige party, he was one of the most prominent figures of the German Reichstag for a dozen years. Truly he was a superman and a shining example of the medical publicist.

The Cost of Prescriptions in Different Cities.—A globe-trotter carrying the following prescription had it filled on his travels at various places, with interesting results: Eighty grains each of sodium bromide, sodium benzoate, and potassium acetate, two fluid ounces of compound tinc-

ture of gentian, and peppermint water enough to make four fluid ounces. It was filled in Philadelphia for 60 cents; New York City, \$1.00; Atlantic City, \$1.15; Palm Beach, \$1.50; San Francisco, 85 cents; St. Louis, 75 cents; Chicago, 80 cents; Baltimore, 50 cents; London, two shillings six-pence; Paris, five francs.

Announcement.—It is with much pleasure that we announce the beginning in our November issue of a series of articles by Dr. N. P. Brooks of Croton-on-the-Hudson, N. Y. on *The Economic Problems of Medical Practice*. These are intended to help the recent medical graduate, as well as the practicing physician who wishes to take up some line of medical work besides the routine practice of medicine. These articles will prove of exceptional interest to every medical practitioner, and the broad and extensive experience Dr. Brooks has had in Mexico, in different parts of the United States and, finally, in the British Army, give his papers a practical value that will make them of far-reaching aid to those who contemplate changing their location or going into special fields of professional activity or practice.

The Old-Time Physician.

Tho the future may flout them and scout them,
The world had been sadder without them;
Tho they rest in their graves without glory,
Tho they live not in song nor in story,
No prophet—no priest—had a mission
More sacred thru all the dumb years
Than that of the old-time physician,
Whose dust we bedew with our tears.

—Dr. James Newton Matthews.

Resolve to Be

True, for there are those who trust you—
Pure, for there are those who care—
Strong, for there is much to suffer—
Brave, for there is much to dare—
Friend to all—your foe—the friendless—
Giver, and forget the gift—
Humble, for you have your weakness—
and
Love and Laugh and Lift.
—*Med. Review of Reviews.*



ANGIOSPASM OF THE PECTORAL ARTERIES [*Claudicatio Intermittens*].

BY

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The syndrom which goes under the name of *claudicatio intermittens* consists of a complex of symptoms the salient feature of which is their appearance during muscular activity and the rapid disappearance after a brief period of rest. When the arteries of the lower extremities are involved the result is intermittent limping.

Intermittent limping has been first described in the horse by French veterinary surgeons. Boully (*Arch. de Médec.*, V. 27, p. 425) was the first who reported a case of *claudicatio intermittens* in a horse.

The horse begins suddenly to limp on one or both hind-legs. After a short rest the animal is well again. When the horse resumes its muscular activity, when it is made to walk, it begins again to limp, about after fifteen minutes. If the animal is beaten, the symptoms are aggravated. Respiration becomes difficult, the heart action is accelerated, and perspiration breaks out all over the body. General trembling takes place, and the animal falls down and writhes as if it had a bad colic. The affected limb or limbs are stiff and contracted. The pulse is imperceptible. After ten to twenty minutes in the passive state, all the symptoms disappear rapidly. The crisis begins again after a few minutes of forced walk. At the autopsy there was found an obliter-

ation of the posterior part of the aorta and its branches, thru clots at the vascular walls. The animal was suffering from a local arteritis obliterans.

In man, *claudicatio intermittens* was first described by Charcot (*Lecons du mardi*, Dec. 13, 1887). He found in the proximity of the arteria iliaca a bullet which had produced an aneurysm of this artery. Since that time many cases of *claudicatio intermittens* not only in the lower extremities but also in other parts of the body have been published.

A typical case of genuine *claudicatio intermittens* which may serve here as an archetype was observed by the writer, April 5, 1923.

Mr. L., 40 years of age, married, father of two healthy children, considered himself perfectly healthy but for his bowels which have always been more or less constipated. About 20 years ago he contracted gonorrhœa. He never had lues. He was always a heavy smoker and meat-eater. Once in awhile he had pains in his ankles. His physician attributed his pains to his gouty condition.

About two years ago, the patient noticed peculiar pains in the calves of his legs, every time he walked on the street, about a hundred feet. If he did not stop immediately, the pains became very severe and unbearable, respiration became panting, and perspiration broke out on his entire body. When he stopped walking right at the onset of the pains, the latter disappeared after about five minutes rest. When he then continued his walk for another 100 feet, the pains reappeared. Recently the pains appear also when walking in his office. Crossing his

business-loft twice would be about 100 feet, thereupon the pains set in. When sitting quietly the patient is entirely free from pains.

The physical examination shows the kidneys to be normal. The second sound of the heart is quite accentuated, the blood-pressure is, diast. 75, syst. 148.

Here we have a pronounced classical case of *claudicatio intermittens*, probably due to a partial arteriosclerosis of the arteries of the legs. The patient was ordered to stop smoking and eating meat and a tonic was prescribed.

The following cited cases are all of the modified type of *claudicatio intermittens*.

J. Ramsay Hunt (*Amer. Journ. of Medic. Sciences*, Vol. 143, 1912, p. 173) describes a case of intermittent pain in the back.

The man, 51 years of age, an excessive user of alcohol, heavy eater of rich food, syphilitic, has excruciating pains in the lower part of the back while walking. When he stands still a few minutes, till the pains wear off, he is able to continue his walk. In the passive state, while sitting or lying in bed, there is no trace of pain or stiffness. The pain is localized in the lower lumbar region and sometimes radiates into both sides.

Kurt Mendel (*Zentralbl. f. d. g. Neurologie und Psychiatrie*, V. 27, 1922, p. 82) reports a case of a lady 74 years of age who admits lues and shows a strong positive Wassermann reaction.

Patient complains of pains in the back and chest, of a feeling of oppression in the chest and of a strangulating sensation around her neck. The attacks take place on the street only, after walking a few minutes. The patient is then compelled to stand still for a while. In the passive state, the symptoms disappear to reappear again when the patient resumes her walk. In this way, she has to rest every few minutes. In the house she is feeling quite well. The disturbance appears only on the street. The examination showed a moderate arteriosclerosis, slight enlargement of the heart, hyper-

trophy of the left ventricle, and a slightly higher blood-pressure, but no aneurysm, no myasthenic phenomena, no hysteria. All pulses were normal.

Mendel considers the malady as an angiospasm of the sclerotic branches of the pectoral aorta, analogous to the process in the abdominal aorta, underlying the phenomenon of intermittent limping.

Wilhelm Erb (*Münchener Med. Wochenschr.*, 1911, p. 2488) reports a case of increased irritability of the vasomotors in the sclerotic branches of the pectoral parts of the aorta.

After walking a little while, the patient experiences pains in the chest, back, shoulders, and upper arms, also in the mouth, palate and tongue. The patient is compelled to stand still for a while. Thereupon the pains disappear to return when he walks again a hundred to two hundred steps. The radialis pulse is relatively weak. The diagnosis is: arteriosclerosis from abuse of nicotine.

Erb attributes to the abuse of nicotine the main rôle in the etiology of *claudicatio intermittens*.

Kurt Mendel (*Klin. Wochenschr.*, Nov. 25, 1922, p. 2386) describes two cases of intermittent hobbling of the upper part of the aorta and its branches.

A merchant, 54 years of age, four healthy children, no lues, no alcoholic abuse, smokes six to eight cigars a day. Patient complains for the last six weeks of a itching in the head, pain in the back at the shoulders and pain and heaviness in the arms when he walks on the street for a little while. In the room he can walk or run as much as he pleases without any trouble, but on the street, the symptoms appear after three minutes walking. He has to stand still for a minute, and the pains disappear. He can now resume his walk, but after additional three minutes walking, the pains reappear. Otherwise the patient has no complaints. The examination gives negative results. The pulse is perceptible on the feet. The arteria radialis is not particularly hard and is

strong on both sides. The heart is normal. There is no sign of an aneurysm of the aorta. The knee reflexes are strong. The patient has a pes planus.

The second case of Mendel is that of a Russian engineer, 61 years of age, 12 years married. He has one healthy child. Lues and alcoholism are denied, but he smokes 30 to 40 cigarettes a day and is overworked.

The patient suffered frequently from slight attacks of gout. For several years he had an oppressive sensation in the cardiac region, pain in the chest and back, and a dull sensation in the head, after extensive walking. These complaints always appear on the street, especially in the evening. When he is now walking continually for several minutes on the street, the pains set in with such vehemence that he has to stand still. After ten minutes rest, he can continue his walk. But after a few minutes the pains reappear.

The arteria radialis is hard, the temporalis sinuous. The heart is overlaid, the cardiac beat to the left. Otherwise the heart is normal. The urine is normal. The foot pulse is palpable, the radialis pulse strong. There is no aneurysm of the aorta.

Erb describes the following characteristic case which resembles our own case in many characteristic features.

An engineer, 66 years of age is suffering for the last 6 weeks from pains while walking. The pains begin in the shoulders and upper arms, on the right side more than on the left side. The pains then extend to the upper part of the back, chest, mouth, palate, and under the tongue. The pains radiate as far as the forearms and hands, without causing any paresthesia or sensation of cold, and seemingly without locomotor disturbance of the arms. The cardiac region and the heart are entirely painless. There is no palpitation, no oppression or anxiety. Respiration is perfectly normal.

The distressing symptoms appear after the patient has made one to two hundred steps and he is compelled to stand still for a little while. Then all symptoms disappear, and the patient can continue his walk for a time. Then the pains appear again. Lately the pains appear particularly strong,

when the patient takes a walk after meals. Sometimes the pains appear very strong, in the evening, after going to bed. As a rule the symptoms are absent when the patient is at rest.

The patient is an inveterate smoker and shows arteriosclerosis in a high degree. The diagnosis is arteriosclerosis of all the branches of the upper part of the aorta, vasomotor neurosis, increased irritability of the vasomotors, and acute local arteritis.

In *claudicatio intermittens* as well as in the modified disturbances, the anatomic anomalies and the functional disorders not seldom combine, but as a rule, they are detached from each other.

Hans Curschmann (*Münch. Med. Wochenschr.*, 1910, p. 1630) describes a case of *claudicatio intermittens* of the lower extremities in a young girl of twenty where arteriosclerosis was entirely excluded. Still he calls the disturbance dyskinesia angi-sclerotica.

Curschmann also describes two cases of inverse *claudicatio intermittens*. The patients suffer pains when lying down. When they begin to walk the pains disappear. The patients can then walk for two hours without any trouble. After a certain rest, the pains reappear.

The youngest case of *claudicatio intermittens* has been reported by Bernert (*Wiener klin. Rundschau*, 1904) in a child of ten where arteriosclerosis surely could not have been the cause of the anomaly.

The following case came under the closest observation of the writer:

A physician and extensive medical writer, 60 years of age, an industrious student all his life, taxing his mental capacities to the utmost, is 16 years married and has one healthy child. He had measles when six and typhoid fever when twelve years of age, otherwise he was always healthy. He is a moderate smoker, about five cigarettes a day, and a moderate drinker, about four glasses of beer a day. He never used

strong alcoholic drinks and had never had a venereal disease.

Twenty-eight years ago the patient had a sudden attack of lumbago after a hot bath in a chilly room. The lumbago was combined with a certain pain all along the right ischiatic nerve as far down as the ankle. The lumbago subsided after four days, but the ischiatic sensitiveness never entirely disappeared to the present day. The least draught of air increases the pain.

Fifteen years ago the patient had a severe attack of influenza which left him in a nervous state for some time. One morning before arising, the patient had a sudden attack of vertigo with the sensation as if somebody in a joke was turning his bed over on one side. Such attacks returned daily, sometimes several times a day always with the sensation that the room was turning on one side. The attacks kept on for a year and disappeared entirely only after a short trip to Bermuda.

For several years the patient felt some uncomfortable sensations on the top of the shoulders which he attributed to the pressure of the suspenders.

A year later, about fourteen years ago, the patient was operated for gangrenous appendicitis. At that time there was found some sugar in the urine, which disappeared with the disappearance of the fever, three days after the operation. Since that time, slight glycosuria appears after worry or unusual excitement. As a rule, the urine is normal.

For several years the patient had on and off some trouble with his bladder. Especially in the morning, when not occupied, he had to micturate very often, sometimes every fifteen minutes, with some difficulty in starting micturition and with the sudden interruption of the stream. After a few moments, the spasm of the sphincter vesicæ ceased and there was a dribbling of urine. The specific gravity at such times was sometimes as low as 1005, but there was no albumen or sugar. The bladder symptoms lasted sometimes for several months and then disappeared for several months. They only manifested themselves in the forenoons, never in the afternoons or in the evenings.

Two years ago, in a windy December evening, at about midnight, while returning from a restaurant, three blocks away, after

having consumed a few glasses of cold near-beer, the patient felt an uncomfortable chill in his back between the shoulders to which he gave little attention. But a few evenings later, while returning from the same place, at the same time of the night, the patient felt a dull pain at the same point, between the lower parts of the scapulae, at the level of the seventh thoracic vertebra, radiating towards the shoulders. A few evenings later, the pains appeared again at the same spot, but this time radiating towards the shoulders and upper arms. At the same time he felt an oppressive sensation in the chest, respiration became accelerated, and in the cardiac region the pains became so oppressive that he could scarcely reach the door of his house. As soon as he entered the hall, pain and cramp would immediately fade away. The trouble always began about a hundred steps away from the patient's house, or after a walk of about two and a half blocks, always after drinking the cold near-beer, and always in the evening.

The trouble being thought to be rheumatic, the patient began to take weekly Turkish-Russian baths, dry heat, and massage of the back. At the massage, there was quite a certain tenderness on direct pressure over the spine at the point above described. During this treatment, the attacks became rarer.

In the spring, when the climate became warmer, the malady disappeared entirely by degrees, and the patient was free from trouble the entire summer. During these summer months another symptom came to the surface. Patient used to take long walks of two to three miles daily, all his life, in the outskirts of the cities where he used to live, e. g., while in Paris, in the Bois du Boulogne, in New York in the Bronx Park. In this particular summer he noticed a certain pressure in the sole of his left foot, as if there were a corn there. When he continued to walk he felt a dull fatigued sensation in the entire left foot as far as the ankle. A rest of a few minutes caused the pressure in the sole and the fatigued sensation to disappear entirely. Sometimes the pain in the sole appeared also while walking on the side-walk in the city.

The following winter 1921-22, the trouble in the foot disappeared entirely, and the

disturbance in the back appeared very seldom, although this time the patient had to walk nine blocks from his restaurant to his home every evening.

In August 1922, one night about 2 A. M., the patient woke up to go to the bathroom. When he returned and lay down again he felt suddenly, at the same point in the back, a sharp pain which radiated towards the shoulders, arms and fingers on both sides. The pain in the cardiac region was especially excruciating. He felt a lacing, tightening sensation in the chest. Respiration became accelerated and panting. The pain irradiated to the gum and the teeth of the upper and lower jaws on the left side. Cold perspiration broke out over the entire body. The oppressive feeling in the chest was so pronounced, and the anxiety was so terrifying, that the patient thought that he was dying and he began to moan, although he is a man who can stand a lot of pain and suffering without complaining. Suddenly the patient felt as if something had fallen down, at the anterior aspect of the spine, and all the symptoms disappeared in an instance.

A few days later, after lunch, while walking on the street, the patient felt again the dull pain, in the same spot in the back. The pain this time radiated first to the teeth and gums then to the shoulders and arms, and a tightening oppressive sensation enveloped his entire chest. When he stopped walking and rested a little, the symptoms disappeared gradually, not so suddenly as during the night attack. The patient resumed his walk, but half a block farther he had to stop again for catching breath. The patient by degrees learned to know the coming of the attacks by a peculiar sensation in the upper and lower molars on the left side. When he stopped walking at once, upon the appearance of the sensation, the attack was averted.

The attacks always set in, while walking on the street, especially in the evening. At home he was perfectly well. The weekends the patient spent with his family, at a summer resort, near a lake. Here he was rowing the whole day, was swimming, and was taking walks of about eight miles around the lake without any complaints. When he returned to the city, the symptoms appeared again, each time he walked on the street.

Suddenly the disturbance stopped for a few weeks, and a frequency of micturition set in, with terrific pains after urinating and considerable difficulty in starting. The frequent painful micturition lasted about a month. The trouble was aggravated in the evening. He had to urinate every ten minutes, each time a few drops under great pain, and he was unable to leave his home. Scarcely did he walk a block when he had to urinate under great tenesmus.

After a month the urinary troubles disappeared by degrees, and with their disappearance, the disorders in the back reappeared. One evening, at 9 o'clock, while quietly sitting and reading, a severe attack seized the patient. The pains in the back radiated to the shoulders, arms and fingers. The latter became numb, cold, and white like snow. There was a creeping sensation in the toes which became cadaverously pale. At the same time, the teeth and gums on the left side became sensitive and painful. Cold perspiration broke out all over the body. The patient suffered from anxiety, resembling that of angina pectoris, and complaint of an oppressive tightening sensation in the chest. A physician called in, found the radial pulse action strong and normal during the paroxysm. Suddenly the symptoms disappeared. But before the physician left the patient, another attack set in. The patient was put to bed, and electric heat applied to his back till he fell asleep.

After this attack several smaller attacks took place for a week, each time the patient went to bed in the evening. For the last three months no attacks occurred at home, but on the street, especially in the evening, after walking a block, the peculiar sensation in the teeth appears, and if the patient does not stop walking at once, a regular attack develops. Thus the patient has to stop walking every two to three minutes. One of the strange peculiarities in the nature of the attacks are their action on the patient on his long walks outside of the city. In the beginning he has to stop walking about three to four times. Thereupon he can walk three to four miles without any trouble.

For the last two months the attacks in the back have become less frequent but the patient begins to suffer from pain in the right knee and along the right musculus adductor

longus which feels hard and is painful to touch. The patient can not bend or stretch his leg without pain. When the knee got better, the right shoulder became painful. The musculi teres major and subscapularis are especially affected, and the patient cannot roll his arm inwards without considerable pain. The pains are especially severe at a change of weather or when the air is saturated with moisture. After a Turkish bath and the massage connected with it, the condition of leg and arm is greatly improved. But the improvement lasts only a few days. At present the trouble in the legs has almost entirely disappeared, and both shoulders are affected. Abortive attacks starting from the back nowadays appear only during some excitement or through aggravation.

The physical examination gave more or less negative results. The heart was found to be normal although the cardiac beat is felt somehow to the left. The fluoroscope as well as the X-ray picture did not reveal anything abnormal. Blood-pressure is normal. The urine of a Sp. gr. 1015, contains neither albumen nor sugar. Prostate is not enlarged. No aneurysm of the aorta is revealed by the X-ray picture of chest or back. The picture of the teeth is also negative. The diagnosis was a gouty condition of the vertebra.

In *claudicatio intermittens* of the lower limbs the pathognomonic and objective symptom in animal and man, is absence of the pulses of the feet. None of the four foot pulses are palpable. This is due to the narrowing of the lumen of the vessels caused by the arteritis of the aorta in the first case in the horse, or by the aneurysm as in Charcot's case. Other etiologic moments are (1) inborn narrowness of the circulatory system, (2) arteriosclerosis, (3) neurotic diathesis. The contributory causes are diabetes, adipositas, gout or arthritis uratica. The provoking moment of an acute attack is exposure to extreme cold, such as a cold bath, a cold foot bath, an extreme draught of cold air,

getting drenched, and especially over-exertion. H. Higier (*Deutsche Zeitschr. f. Nervenheilkunde*, 1901, Vol. 19, p. 438) ascribes the acute phenomena to a sudden thrombosis of the veins. Erb accuses nicotine poisoning, injury by cold, and indulgence in highly seasoned and spicy foods.

Mendel, speaking of the variations of *claudicatio intermittens*, says that the basis of the disturbance, always appearing after walking, is an angiospasm of the sclerotic branches of the pectoral part of the aorta. It is a localized arteriosclerosis of these particular arteries. Hence the malady corresponds to the intermittent limping of the lower limbs.

But even in the *claudicatio intermittens* proper of the lower extremities localized arteriosclerosis will not account for the syndrome in every case. Had the ten-year old child or the twenty-year old girl also a localized arteriosclerosis? This is scarcely probable. In such cases we would have to assume an inborn narrowness of the arteries where a sufficient supply of blood is received for the physiologic processes in the passive state but which does not suffice for the increased demands during muscular activity.

But even this hypothesis would not explain the inverse *claudicatio intermittens* where the attacks appear just when the individual is resting. No form of arterial disease, such as arteriosclerosis, senile calcification, obliterating endarteritis, or acute arteritis could explain an attack in bed, in the middle of the night as due to increased activity. In our case for a week or longer the attacks set in just when the patient retired to bed. The fact that our patient has a few small attacks in the beginning of his promenades and is then able to walk several miles without the least

trouble also speaks against an anatomical narrowness of the local arteries.

The only explanation in our case is a vasomotor neurosis. The vascular spasm narrows the lumen of the vessels and diminishes the flow of blood to certain parts with a resulting ischemia. The disposing factor for the first attack, in our case was the severe exposure to cold. But once such an attack has occurred, in an hysteroneurotic patient, an angiospastic complex is formed, and the attacks will set in at the least provocation.

Such angospasms on neurotic basis will occur at any time, even when the patient is resting in bed, while they seldom appear when the patient is doing hard manual work or while he is climbing several flights of stairs. Our patient never experiences the slightest discomfort while he is doing very intense writing or when he is walking miles in the country, or when climbing stairs. But while walking one block in the city he will have to stop three to four times to ward off an attack. When he has arrived at his destination he is able to climb up four flight of stairs without any discomfiture. This paradoxical onset of the paroxysms can only be explained by an angioneurotic tendency.

Oppenheim recognizes, in *claudicatio intermittens* proper of the lower limbs, a benign purely functional type, due to a vascular spasm or angioneurosis. He (*Oppenheim H., Deutsche Zeitschr. f. Nervenheilkunde*, 1900, Vol. 17, p. 317) found in each of four cases of *claudicatio intermittens* a pronounced neuropathic diathesis. In two cases there were several toes grown together. In one of these two cases there was besides this deformity an asthma nervosum. The third patient suffered from hysteroepileptic attacks. The fourth pa-

tient stuttered and suffered from writer's cramp. He, therefore, comes to the conclusion that in many cases, even *claudicatio intermittens* proper represents a functional neurosis. Spastic conditions of the muscles in the walls of the arteries of the corpora cavernosa penis are physiologic. In psychic impotence the spastic contraction of the muscles within the asteriae helicinae prevents erection.

The fact that our patient observed for years an unilateral perspiration of his body, where one half of his face and head was bathed in perspiration while the other half was perfectly dry, can only be attributed to an inherent weakness of the nervous system, especially of the vasomotor nerves. This hyperhydrosis of one half of the body together with the apocamnosis or abnormal fatigableness of his arms, when held over his head, also the fibrillary clonic quivering and jerking in the muscles in the calves of the legs, the occasional paresthesia of the fingers and the disquamation of the toes, all tend towards the assumption of neurotic vasomotoric disturbances.

Especially the bladder trouble can only be attributed to an angospasm of the sphincter, based upon a psychic disturbance. The patient never had any urethritis, specific or non-specific, the prostate is not enlarged. The microscopic examination of the urine does not show any pathologic contents. The frequency of micturition is usually observed in the morning, never in the afternoon, except he be under emotional excitement. He seldom has to micturate more than twice during the night. The difficulty in starting micturition, the sudden interruption of the stream, which does not decrease and die away as is normally the case, and the dribbling of a few drops after a few instances show that the bladder

trouble is due to a spasmotic contraction of the sphincter vesicæ. Especially the alternation between the bladder symptoms and the intermittent paroxysms is almost convincing that both disturbances are due to a neurotic diathesis.

The basis of the symptom-complex of *claudicatio intermittens* and its variations in other parts of the body is either a physico-pathologic condition of the vessels or a neurotic angiospasm. In our case, the neurotic basis furnishes an easier explanation for the various symptoms. The onset of the paroxysm after a strong emotional agitation, the increased respiratory reaction, the cadaverous paleness of fingers and toes, the stenocardic oppression during a passive state of the body, all tend towards the assumption of a purely functional vaso-motoric neurosis.

In such cases of purely functional neurosis, the prognosis is favorable. The treatment consists of special care and rest.

diminution of smoking, moderate intake of meat, coffee, tea, or alcohol, no spicy foods. To recommend are, iodine, aspirin, quinine, and hot baths. Sometimes small doses of digitalis are indicated. Exposure to cold and overexertion must be avoided. All causes of mental or emotional agitation must be removed from the presence of such patients, especially where the disposing factor is psychic in nature, as in our case. In some cases the galvanization along the entire nerve which innervates the affected muscles gives relief analogous to psychic impotence, to which the syndrome of *claudicatio intermittens* is somewhat related. In psychic impotence due to psycho-emotional trauma, electricity removes the vasoconstriction of the arteriæ helicinae and of the arteries of the corpus cavernosum. In the same way the angospasm is removed by electricity in *claudicatio intermittens* of a neurotic origin.

155 West 118th Street.



PROPORTION OF PHYSICIANS TO POPULATION.

The 1921 directory of the American Medical Association listed 8,034 legally qualified physicians in Ohio. This array of medical talent serves "5,759,394 persons, or conversely, there is one physician for every 717 people in the state."

"Such service," the survey shows, "per physician, is slightly in excess of the average for the United States and more than double that of England. The average for the United States is 765; for England, 1,537; for France, 1,960; for Germany, 2,134; for Austria, 2,319, and for Russia, 7,865.

"Among the forty-eight states, Ohio ranks twentieth in the number of persons per physician. The State of California leads with an average of 508 and South Carolina is last with 1,160."—From Report of Committee on Medical Economics, Ohio State Medical Journal (May, 1923).

SOME PROBLEMS OF THE REST CURE.

BY

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Introduction.—It is well known, of course, that the "rest cure" as we know it originated with the late S. Weir Mitchell. Before his utilization of carefully organized rest cures, rest had been ordered only when obviously necessary because of the marked impairment of the physical condition of a patient. The general recognition at present of the great value of rest in certain psychoneurotic states makes Weir Mitchell's arguments in favor of rest as a therapeutic measure somewhat surprising to us when we read them. Many of us fail to realize the importance of the pioneer work that he did. The original Weir Mitchell "rest cure," as he emphasized, did not consist in rest alone; seclusion, passive muscular exercise, and overfeeding (of undernourished patients) were also important factors. As a matter of fact, Weir Mitchell made it clear that his success was based upon this combination and he asserted that if any originality were to be attributed to his system it lay in his thought of combining these several measures in an organized therapeutic regimen. He recognized, too, the importance of treating the psyche in order to bring about a sort of "moral regeneration." But he, perhaps wisely for his time, refrained from elaborating any special psychotherapeutic technic, relying upon such improvisations as common sense and his medical experience suggested.

Present-Day Applications of the Rest Cure.—In Weir Mitchell's hands the method was first applied to cases of functional nervous disorder, but gradually he extended the

scope of the therapy to include certain organic disturbances, like tabes and cord scleroses. During the last fifteen years we have seen a notable further extension of the application of the "rest cure." Thus excellent results have been obtained in utilizing the fundamental principles underlying it, in the treatment of tuberculosis, anemia, arterial hypertension, angina pectoris, hyperthyroidism and many other syndromes. There have been various reasons for this extension, but the most cogent have been (1) an increasing appreciation of the value of physiologic methods of treatment and (2) a realization of the necessity of some systematic and effective protection of patients, for a time at least, against the increasing complexity and urgency of modern life.

The problems that come up when we make use of the "rest cure" are of course largely individual, related to the single patient and to the particular disease from which he suffers. The majority of rest cures are instituted in certain functional nervous disorders, the so-called psychoneurotic states; hence, in my discussion of the present-day rest cure, I shall refer especially to its application to the treatment of such states.

Fatigability, exhaustion and irritability (both somatic and psychic) are among the most important symptoms of one group of the functional nervous disorders; according as the somatic or the psychic symptoms predominate in the clinical picture, we speak of *neurasthenia* or of *psychasthenia*. Dercum calls neurasthenia a state of chronic fatigue and the same applies to psychasthenia. In many functional cases emaciation, headache, uncertainty, supersensitivity, insomnia, indigestion, vague pains,

etc., strongly indicate exhaustion of all the bodily functions.

Protection First, Exertion Later.—With these facts in view, then, the first part of the program of the rest cure is to provide for a period of protection, to permit of recuperation. We put the patient to bed to rest his body; we relieve him, for a time, of the mental effort of making decisions; we exclude from his environment everything that tends to keep up his abnormal train of thought; and we see to it that he is, as far as possible, guarded from influences that excite depressing emotional states. During this period we keep three main objects in view: (1) *Restitution of tissue*, which may be brought about in the body cells by influencing metabolism by rest and overfeeding. Emaciated patients are given an abundant diet with extra milk and eggs so that they gain rapidly in weight. Patients who are distinctly overweight are given strengthening food, but not fattening food, so that their weight is slowly reduced. Exhausted nerve cells are protected by removal of excessive calls upon the nervous system, by encouraging sleep and by soothing measures of various sorts. (2) *Proper elimination thru the skin, kidneys and bowels*, thru the use of baths and of massage to promote the circulation of the blood and lymph and to maintain muscle tonus, thru water drinking and thru adequate attention to the intestinal functions. (3) *Improvement of mental and emotional habits*; thru explanation of erroneous interpretations, thru the combating of obsessions, thru the removal of fears and thru the cultivation of self-control. Occupational therapy is of the greatest help here.

It is understood, of course, that due attention is to be paid to every existing evidence of somatic disease. Certain reme-

dial measures, like minor surgical procedures, when indicated, are often best carried out before placing the patient at rest or at least in the early stages of the rest cure; tho, of course, delay is sometimes necessary. All the indications for treatment should be very plainly before the physician; he should not advise or undertake a rest cure without having previously most thoroly studied the patient from every angle.

This restorative process to which I have just referred may be continued for several weeks, on the average for from four to five weeks, tho in certain cases a somewhat longer period may be necessary. The patient should, during this time, lead largely a vegetative life with just enough muscular activity to preserve good muscular tone, and just enough psychic activity to keep the energies from stagnating. At the end of the period the weight should approach the normal, there should be better performance of the general bodily functions, and the mental attitude should have become more normal and the patient expectant of further benefit.

Then comes the second period of the cure, that of bodily and mental stimulation, rest giving place to slowly increased exertion. The patient is permitted to sit up, and later to walk. Graded exercises, calisthenics, golf, horseback riding, gardening and other activities are encouraged, but a close watch is kept upon the patient to see that he always avoids real fatigue. In patients who have no special interests, we try to cultivate hobbies and avocations. This period of re-education to activity should be prolonged until the patient can bear without fatigue the ordinary frictions of life; it may vary in length from two to three weeks to many months.

Treatment of Special Symptoms.—In many patients the course of a well-organized rest cure combined with psychotherapy and re-education is smooth and uneventful. They feel the pressure-effects of the "system" and respond satisfactorily. There are, however, certain special complaints that may be troublesome and particular situations that have to be met. To some of these we may now conveniently turn.

Constipation.—This, in my experience, has almost ceased to be much of a problem, especially in patients who can be induced to ingest liberal quantities of food, since the very bulk of the diet increases the peristaltic activity. We are struck with the frequency, in nervous patients, of spastic conditions of the colon (often associated with mucous colitis) as revealed by X-ray studies. It has seemed to me that one of the advantages of the rest and relaxation of the protective period is the lessening of this spasticity, thus relieving the constipation. Occasionally, we may give a little belladonna to promote relaxation of the intestinal spasm. Water is, of course, necessary in adequate amounts; a glass or two of hot water taken before breakfast is often very helpful. A little raw fruit at bedtime may be eaten with advantage. The most important thing of all is, of course, the cultivation of regularity in the time of the daily evacuation; and the mechanism of habit formation in overcoming constipation should be carefully explained to the patient.

Of special help in treating constipation during rest cures is the use of mineral oil; it should be given not only to patients who complain of constipation, but also to those who, tho having bowel movements, are found, on X-ray examination, to suffer from cecal and ileal stasis. It would seem that best results follow the regular

exhibition of the oil at night only or both at night and in the morning, making the dose as small as is found to be effective, but avoiding the rather common tendency to omit the oil altogether as soon as one or two satisfactory bowel movements have been obtained. Occasionally, a patient complains that adequate doses result in rectal leakage, and in such instances one should try to get a better intermixture of the oil with the intestinal contents by giving several small doses daily, preferably immediately after meals. When there is actual sphincter weakness, however, it may be out of the question to secure good results in treating constipation with mineral oil. Agar is a useful substance in some instances, particularly where the diet is of necessity not bulky and seeds of Psyllium may also be used to increase the bulk of the intestinal contents.

The measures just mentioned are practically all physiologic in nature and are certainly effectual in the treatment of functional constipation in a large percentage of patients if carefully applied. Should they not suffice, certain other measures may on occasion be resorted to. The milder laxatives are often beneficial. Cascara may be used, preferably in the fluid form so as to permit of easy gradual reduction of the dosage. There is no objection to the use, occasionally, of a saline, if the patient be still in bed and especially if he be eating liberally and still have constipation, but it is certainly no help in the treatment of chronic constipation to resort frequently to the use of saline cathartics. The enema habit often presents itself for abolition and its evils should be made clear to its victim, the physician emphasizing the insufficiency of the method and its tendency to increase colonic atony.

Anorexia.—Patients who are emaciated often complain of the lack of appetite and even of a repugnance for food. This complaint should be met by the assurance that food is assimilated if eaten even in the absence of an appetite and that food may well be regarded as so much indispensable "medicine." The way in which the food is served is of the utmost importance. It goes without saying that the food should be suitable to the patient's needs, of the best quality and properly prepared. Not only should great care be taken to make the trays attractive, but, particularly if the appetite be poor, the meals should be divided into numerous separately served courses, with no hint, when one course is served, of what is still to follow. The quantity of food that a person ingests depends very much upon habit, and a patient who has been overabstemious may easily train his stomach to receive very liberal amounts. Various bitter "tonics," especially *nux vomica* and gentian, may be tried as appetizers, but their effect is probably largely psychic and transient. Some patients assert that they have observed an improvement in appetite to follow upon a course of injections of sodium cacodylate. An abundance of fresh air is, of course, important for the promotion of appetite; it is best obtained by placing the bed in the open air for as many hours a day as is feasible.

Insomnia.—Another troublesome symptom at times is inability to sleep. The insomnia of rest-cure patients is likely to be one of three common types; thus (1) sleep may come only at a late hour; or (2) wakeful periods may alternate with sleep; or (3) there may be sound sleep until toward morning, when the patient awaking cannot get off to sleep again (matutinal insomnia).

When insomnia is complained of, the

physician should try to ascertain how well-founded the complaint is. Patients often think that they sleep but little, when in reality they secure five or six hours of sleep.

It goes without saying that certain extraneous causes of sleeplessness such as unnecessary noises, cold, nocturia due to late water drinking, and many others should be eliminated. If, however, it be established that the symptom is due to the general nervous disturbance, we should explain it as such to the sufferer, urge him to be willing temporarily to bear the symptom and to exercise patience, while at the same time efforts are made to remedy the condition. Often the presence of a nurse in the room at night for a few nights is the best remedy, for a good deal of psychoneurotic insomnia is based upon a fear of lying awake while alone. In all cases, an abundance of fresh air is important; sleeping out of doors may be helpful. Excitement during the day and particularly during the evening should be avoided. In some instances massage is helpful, tho in many of the cases it may be too stimulating; it should, as a rule, not be applied late in the day.

In the restless tense type of patients, general sedative measures may be temporarily beneficial; thus small doses of bromides, adalin or similar remedies may be administered three or four times a day until the patient sleeps better. Hot tub baths should be avoided at night, but immersion in comfortably warm water may be tried. In certain patients, wet packs at night exert a soporific influence. In women, a wakeful night at the onset of menstruation may initiate a habit of sleeplessness. One may occasionally make use of hypnotics like veronal, dial or luminal; if given, they should be used in such dosage as to be effectual so as to restore the patient's con-

fidence in the possibility of relief. Sometimes a regular schedule of dosage is useful; thus, for instance, one may give five to seven grains of veronal every night for from four to eight nights, then the dose may be reduced one-half, in combination with fifteen grains of bromide say for seven nights; after that it is often possible to get on very well with bromide every night and a small dose of veronal on alternate nights. After a few nights of this the veronal may be omitted and the bromide gradually reduced. Hypnotics like veronal are best given in hot milk and it is best for the patient to be ignorant of the drug he is receiving and of the dosage. Patients often have too high an ideal of the amount of sleep they must have. They should be taught to bear a certain amount of insomnia with equanimity. Indeed, the psychic handling of insomnia is more important than its treatment by drugs.

Nausea.—Tho not a very frequent symptom, it is sometimes troublesome in the morning, thus making breakfast a small meal. Except in hysterical individuals, or in patients with organic disease, the nausea does not ordinarily lead to vomiting. It is best to advise persistence in eating despite some nausea; in hysterical patients this advice should be accompanied by the statement that if the meal is vomited another similar one must immediately be eaten.

Restlessness and states of tension are sometimes helped by very frequent conscious relaxation of the tense muscles. Mental ventilation and occupational therapy will do much. Drug treatment may include bromides, adalin or the chloral and bromide mixture of the National Formulary.

Some Principles of Importance in Rest-Cure Management.—In conducting rest cures there

are certain important principles that deserve to be stressed.

First, I would emphasize the value of a well-organized system and the establishment of an exact routine that may be followed from beginning to end. No rule should be absolutely inflexible, but there should be an almost military preciseness observed about the times for meals, baths, bowel movements, exercise, rest periods, occupation and preparation for sleep. This preciseness helps morale and helps the nervous system to adjust itself to normal functioning. The patient should understand that the details of this system originate with the physician and not with the nurse and that he will be expected to continue to follow many of the rules, at least for some time, after his return to his home.

In the second place, it is important that the physician know every detail of the patient's physical condition and of his mental reactions before entering the patient's room for the professional visit. This necessitates well-kept bedside records of the food actually consumed, of complaints, of mental attitude, of anomalies of behavior, etc. Special nursing charts are indispensable; and they should not be allowed to degenerate into a stereotyped record of meals served and drugs administered. Moreover, there should be daily, or at any rate frequent, conferences with the patient's special nurse at which the details of the case are discussed and further instructions given.

Too frequent questioning of the patient should be avoided, and this again requires intimate knowledge of the actual happenings. The patient should be allowed to see that the physician has this knowledge and that he desires to avoid the harmful discussion of symptoms that often tends to prolong their existence. When patients ask

questions they must be truthfully and tactfully answered.

In the third place, an essential of success lies in the recognition of the importance of psychotherapy. In most cases no elaborate psychotherapeutic technic is required, tho each patient must be individually studied in order that the best method of approach may be decided upon. Some patients respond to the encouragement inherent in a favorable prognosis and the evidence of help presented by the details of the rest cure, and they require very little other guidance to help them recover their equilibrium. There are others, however, who will remain essentially unchanged unless they can be made to see that the basis of their difficulties lies less in their somatic disorders than in the complex result of fears, conflicts and social maladjustments. Nothing is more untrue or more harmful than to say to one of these patients that he is not ill and that he alone must exercise his will power and work out his own salvation. In many instances the so-called will power of the patient is actually inhibited, but by patient explanation, honest encouragement and steady reassurance, the inhibitions can be

removed and gradually the will be made to grow stronger by judicious use. By persistent following of these methods the self-confidence of the patient can gradually be restored.

Summary.—As a working basis in treating the psychoneuroses we do well to lay stress upon (1) exhaustion from physical or mental strain or both, and (2) the psychopathic constitution that predisposes to the development of such psychoneurotic states.

It is important to combat the idea that a rest cure consists only in provision for physical rest. Isolation from family and friends for a time is a help in giving mental rest and a truer prospective. The food intake is to be adjusted to the actual bodily needs. A psychotherapy that is no more than a series of fatuous reassurances that all will somehow be well will seldom succeed.

A true psychotherapy consists of a well-planned attempt to understand the patient's personality and to relieve him of the heavy burden of wrong interpretations, of fears, of conflicts, of social maladjustments and of false ideals.

1035 North Calvert Street.



THE GENERAL PRACTITIONER.

The common doctor, who has spent thousands of dollars in his education, is beset on all sides by cultists who are for the most uneducated and untrained men. These cultists actually receive more money for their various drugless treatments than the honest, honorable physician who is trying by methods, which we confess are not always exact, but methods which have stood the acid test of time. A Christian Science healer receives more for a prayer than a physician receives for an intelligent prescription that cures.
—The Medico (March, 1923).

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.¹

BY

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Tubercle infection of the lungs may originate as a local foci of infection, manifesting very few or no clinical symptoms, or it may assume an acute, general or systemic character from its earliest inception.

Pulmonary tubercle infection of purely incipient stage gives so few clinical symptoms that in many cases it is surprising to find on physical and X-ray examination how much infiltration has already taken place in the lung without producing any symptoms whatever, to the great surprise of the physician and consternation of patient. Naturally, symptoms in some form would have to become apparent before an examination would be requested, unless an examination was being made for something else, as for life insurance, etc., when the attention of the medical examiner is attracted to an area of infiltration with probably moisture and râles already present and perhaps bacilli in the sputum of which the subject would be wholly unconscious. In real incipient pulmonary tuberculosis there should be no bacilli in sputum and there should be very little sputum from the lungs proper, but there may be considerable catarrhal sputum from nose and throat.

When bacilli are demonstrable in the sputum, it is supposed to be an open case already, even if the focal infection is quite small in area. The medical profession is better posted on the diagnosis of this disease today than ever before in the world's history, and it will not be necessary to dwell on the whole didactic régime in a short paper

like this. So let us reason together on the subject of how to locate accurately and intelligently the very first signals of danger from this dread disease in our patients.

Much has been written about blasting the life of a young man by carelessly declaring him tubercular when he is not so afflicted. This is indeed bad but nothing to compare with holding the same information from a patient who really has the disease until he has become so infected and the disease has made such an advance that his recovery is doubtful or impossible. Ignorance or carelessness makes either one of these conditions possible and liable to cause a great hardship or injustice to patient. What we should be able to do is to recognize the appearance of the first clinical symptoms of disease and act accordingly.

Incipient Pulmonary Tuberculosis.—The patient is exceedingly fortunate whose first clinical symptom is raising a little blood, either mixed with sputum or otherwise. It produces such a shock it causes him to pause, to think, become concerned as nothing else could do. It brings him to his physician or to the one he thinks is the best to be had for lung troubles, as the more he thinks of it the more alarmed he gets and the more interested he is to know if he has this fearful disease. This is why he is so fortunate as it brings him to the physician while the disease is in its most favorable state for arrest and cure. The physician should tell him the truth and should keep in close touch with and guidance of the case until he is fully recovered and can continue his accustomed employment. This may be the first and only symptom and disappear as soon as it came, but do not forget the warning.

The next important symptom likely to appear as an early warning is an acute pleurisy, this usually attended by such a sharp,

¹Read before the Western Electrotherapeutic Association, April 20, 1923, Kansas City, Mo.

stinging, stab-like pain that few will put up with it without the aid of a physician. I have known this pain to be called intercostal neuralgia, muscular rheumatism, and later called pleurisy. Then when the lung began to show evidence of tuberculosis and patient failing rapidly, it had to be still further modified to quick or acute tuberculosis. Remember, if it is pleurisy you want to recognize it as such and remember, every pleurisy should be considered a tubercular pleurisy until otherwise proven and this is the important point I wish to impress—keep that pleurisy from going, if possible, into a quick and painful tuberculosis.

The more incipient the case the less clinical symptoms will be present. Especially will this be the case in the lymphatics or more chronic types of invasion. Here we may have a spread of infiltration out of all proportion to the clinical symptoms which are very meagre, as slight cough or hack, clearing up of throat, pulse may be a little fast on exertion, easily fatigued, a malaise not common to individual, don't feel good and appetite is "off". Percussion reveals very little if anything, auscultation may show a jerky respiration, probably a puerile breathing and soon a very fine crepitation may be heard at apex. X-ray skiagram is likely to show increased size root or hilus opacities with fan-like opacities from enlarged lymphatics spreading out toward the apices of one lung more than the other. Frequently this fan-like opacity can be demonstrated before the discovery of crepitation or finding bacilli in sputum.

Occasionally we have a different type to deal with in incipient infection of tuberculosis of the lung. Here we may have no more physical signs than we had in other classes but the clinical symptoms are widely different. The systemic manifestations are out of all proportions to the physical find-

ings in the lungs, so much so that the lung condition may be overshadowed entirely for the first few days. The case comes on with chill and high temperature, cough, blood spitting and pleurisy may be present, weakness, loss of appetite, restlessness and rapid emaciation, etc. Here X-ray plays an important place in aiding the physical examination in locating the first physical signs to appear in the lungs as they will appear in rapid succession producing a grave condition in that organ, as the manifestation of these acute cases are always to be dreaded. Never use tuberculine in any manner as an aid to diagnosis in these acute cases. These acute symptoms bring us to the beginning of acute general miliary tuberculosis, lobar pneumonic phthisis and bronchial pneumonic tuberculosis which are three of the most dangerous conditions we have to face.

Acute Miliary Tuberculosis.—This type of tuberculosis is always supposed to be secondary to some local or other form of tuberculosis. While at first it may appear as of primary origin, it will be found that some caseous gland or other foci has broken down and emptied its contents into the blood stream and an entirely new and grave condition has become engrafted upon the mild and probably chronic condition already present. This new condition may be confined to the lungs or it may be spread over the whole body, accompanied by chills, high temperature, night sweats, great exhaustion, hemorrhages or meningitis. The physical signs in the lungs develop rapidly with great destruction of tissue before the death of patient.

Lobar Pneumonic Phthisis or Tuberculosis.—Lobar pneumonic tuberculosis, as its designation would imply, is a grave and serious condition. It is ushered in with severe systemic symptoms, as chills and high temperature, flushed face, quick, full pulse, difficult

breathing, cough, bloody or rusty sputum later with great depression, air hunger and pain in one side of chest, etc., few symptoms to indicate tuberculosis as they are all overshadowed by the pneumonic symptoms. Here the right or left upper lobe is soon completely consolidated and it may spread to more lobes. It appears under all examinations a typical ordinary lobar pneumonia. It does not begin to resolve before eight to ten days, becomes more chronic or slow in its course and is declared an unresolved tubercular pneumonia, and it is likely you will find the mucopurulent sputum very abundant and loaded with tubercle bacilli and other mixed infections. Streptococci and pneumococci will be very abundant. They hasten the formation of abscesses and the rapid breaking down of the tissues—rapidly placing the patient in a very serious condition.

Acute Bronchial Pneumonic Tuberculosis.—This condition is a very serious one, but does not run quite as rapid a course as the previous type just mentioned. It is likely and generally is in the early stages taken for a bronchial pneumonia. It spreads in districts or local places thruout the lungs and does not infect a whole lobe at a time. A single consolidated district is usually composed of a lobule, alveola cells and small bronchioles given off from a small bronchus. These may coalesce and form masses of considerable size or may be disseminated thruout lung. Sometimes these consolidated areas become caseated, walled in or become liquefied and are discharged thru a bronchus to the great benefit of the patient.

Initial Pulmonary Hemorrhage.—Hemoptysis has always played an important rôle in pulmonary tuberculosis. It manifests itself in any and all stages and types of disease, from its very incipiency even to cases in their direst extremity. No infected case

can be so robust and sure of health but what its phantom may stalk at his side, and the poor invalid already exhausted dreads its untimely coming. The blood may be abundant or only a trace in early cases, but it is from a congested irritated bronchial mucous membrane and must be recognized as a positive symptom of danger and is an early diagnostic symptom. In later stages when the blood comes from old cavity aneurysms or from broken down caseous areas the quantity may be great and can sap the life of patient very quickly.

Acute or Chronic Pleurisy.—Trousseau, a celebrated French physician, some forty years ago made the declaration that "all pleurisies were tubercular pleurisies." My old preceptor, R. C. M. Page of New York, used to say that that might be the case with the beautiful climate of Paris but would not hold good in New York. I am of the same opinion as the Frenchman as I am almost constrained to believe about all of the pleurisies I see in Denver are of tubercle origin. In many cases of pulmonary tuberculosis the whole train of symptoms follow upon an acute attack of pleurisy and they are usually troublesome cases, having much pain, severe cough, running considerable temperature, which are worrisome and annoying both to patient and physician.

Bronchial Onset and Other Conditions.—Many patients date their illness from a certain severe cold or la grippe, typhoid fever, measles, etc. These cases usually have had a bronchitis, maybe a tubercle bronchitis, upon which have become engrafted a more or less mixed infection, producing a severe and harassing cough out of all proportion to the manifested lesion present. Bonney considers the essential factors played by la grippe and influenza in these cases is, that they reduce the vital powers of resistance of the patients so much that they become an

easy prey for a rapidly advancing tubercle infection. Again, thru this bronchial route we may have an infection so mild, slow and chronic in its course that it may have spread over considerable area without attracting the notice of patient whatever, and only brought to light by some accidental investigation. The course of these cases is usually mild and more or less of a chronic nature. We will also find cases more or less with digestive symptoms, laryngeal and lymphatic tendencies predominating them.

Upper Air Passages.—The nose, throat, tonsils and larynx should be kept constantly under surveillance so as to avoid danger of complications from them at a later date. The teeth frequently give much cause for worry from hidden foci and other septic conditions. It is important that the entire mouth, throat and nose should be kept in as thoroly aseptic condition as possible. The teeth are exceedingly important factors in tuberculosis. I am sure I have seen patients lose the fight against tuberculosis simply on account of having no teeth and therefore not being able to eat and digest properly. Cough and expectoration are important symptoms in all cases. They are usually an index to the severity of case and also aid you in determining different stages of the disease.

Fever.—The temperature is always a barometer as to the present and future danger of the case. Excessive temperature, cough and sputum, with chills and night sweats, betoken a rapid progress of case, driven forward by mixed infection toward a desperate ending.

Fibroid Phthisis.—This type of tuberculosis is one in which the production of fibrous tissue predominates the case and is invariably of chronic type of disease. Few bacilli will be found in the sputum and usually there will not be much sputum and the

little found will not be mucopurulent, but nearly white. Later, as the fibrous tissue increases, the bacilli may almost disappear but the production of fibrosis continues. There is little or no fever but great wasting, little cough, but short breath on exertion and air hunger. The progress of case is slow and with care the patient may live for many years. If the sputum is very offensive look for bronchiectatic cavities.

In advanced and terminal stages nothing is more readily recognized than pulmonary tuberculosis; but in the early incipient or first stages of the infection its positive detection may be extremely difficult, but the necessity of its accomplishment is no less imperative. Therefore, after careful physical examination and comparison with the clinical symptoms, X-rays should be made use of to throw more light or information on the case.

X-Rays.—Williams of Boston, in about 1901, wrote one of the early and most interesting papers on the subject of X-rays in the diagnosis of pulmonary tuberculosis. The author has used X-ray skiagrams as a regular procedure in the diagnosis of pulmonary tuberculosis since 1904. The great world war has developed and perfected the technic and given a great impetus to this means in the diagnosis of the early stages of this disease.

The taking of many thousands of skiagrams of non-tubercular and tubercular chest conditions, and being able to follow many of these cases to autopsies made by the finest pathologists in the country has demonstrated the wonderful value of this agent beyond the cavil of a doubt in the early diagnosis of pulmonary tuberculosis. At the present time, with a good skiagram, accompanied by a careful physical examination and clinical history, a positive diagnosis should generally be made with accuracy and

dispatch. Therefore, the author considers that every doubtful or suspicious case of pulmonary tuberculosis should not be allowed to go very long without an X-ray examination being made of the chest, which, with the previous information already obtained, should enable the physician to make a correct and positive diagnosis of the case.

In reading or interpreting these skiagrams, you must remember your anatomical surroundings and pay careful attention to same. The apices, mediastinal space, the bronchial and mediastinal glands, the shadows of the hilus, thymus or its remains, size, position and shape of heart, the diaphragm and its angles, pleura, etc., all have their place and bearings in the reading of an X-ray film of the chest. It is also well to remember the outline of each lobe of the two lungs, their proportionate size and location in chest. X-ray films demonstrate the majority of cases seem to have their origin or spread into the lung from the hilus toward the cortex, while some others seem to have their origin in pleura and spread from cortex toward the center or hilus of lungs by means of the lymphatics.

By way of parenthesis, I wish to say it has seemed to me that the cases spreading from the hilus by means of the lymphatics to the cortex, seen as fan-like opacities, are usually more amenable to treatment, or are milder and slower in their progress than the cases originating along the pleural border and spreading inwards.

Dunham calls attention and lays much stress upon "connective tissue septa," rich in lymphatics, dipping into the cortex and producing excellent barriers in preventing the spreading of infection by contact. No doubt these septa do aid in a great many cases but we know in some conditions the spread is so rapid and in mass formation that no barrier seems to have any effect.

The first symptoms to be discovered by auscultation in the majority of cases will be a fine crepitation in the apices, usually of one lung. As Brown insists, it must be above the second costochondral union in front and above the origin of second rib in rear.

The X-ray will demonstrate in many of these cases the enlargement of opacity in the hilus area due to enlargement of the lymph glands and tissues before the crepitation can be demonstrated in the apex. In fact, the enlarged lymphatics as they spread from the hilus to the apex in a fan-like formation, sometimes called "Dunham's fans," clearly prove this contention. With an X-ray skiagram of a chest before you, with the history of the case fully known, the different stages and progress of the disease lie before you like an open book.

By means of X-ray the earliest and tiny foci of infection, with or without bacilli, or large mass infections and cavity formation can be equally well demonstrated. The first râles and foci of parenchymatous infection are usually found in upper apex of the right lung but may be in left lung and are shown on the X-ray film in varying degrees of opacity. There are cases in early tuberculosis, in which doubt still may exist, and here you will find a judicious use of tuberculin can be made to give you good service and aid you in making a correct diagnosis of case. Any case of pulmonary tuberculosis is so sensitive to tuberculin and so positive in its reaction to same that it can be used to great advantage in doubtful cases. As a regular procedure in borderline cases I use the tuberculin ointment after the plan of Moro. Cleanse the arm with water and soap near the biceps and rub a piece of ointment about the size of a pea into a small area of the surface of

arm. Use the edge of the finger nail in the rubbing just enough to increase the blood supply, making it quite red, so as to insure the absorption of ointment. If positive, in twenty-four or forty-eight hours there will be small red pinta appear on area and the quantity or number of these pinta appearing in the forty-eight hours is a very reliable guide as to the quantity and activity of infection present. If there are a great many pinta the infection is acute and quantity considerable, but if only one, two or three, etc., in all, it is very slight. I prefer this method to any other because it is absolutely harmless and on account of its prognostic value.

Prognosis.—Great stress is laid in this short paper on early diagnosis for the reason of its great importance. If these cases are diagnosed before temperature and acute symptoms have developed they can be treated and kept at home at their usual work and never realize that they were sick. These are the cases where you can get some

good out of tuberculin, or better still, von Ruck's new vaccine. This new vaccine of von Ruck's in these early cases is splendid for increasing their immunity—but do not make a mistake and use it where you have temperature and acute symptoms under any condition.

The cases of acute miliary, lobar pneumonic and bronchial pneumonic tuberculosis are among the most grave conditions in tuberculosis that we have to come in contact with. The mortality is very high. Remember these cases are always of mixed infection with streptococci and pneumococci predominating and must be looked after with special care. These are cases where X-ray for its direct and specific effect on both pathologic and normal tissues of the lung, a one pole electric current for its effect on heart and metabolism with oxygen in some form for inhalation, added to the regular rest, forced feeding, hygienic and medicinal care as are usually employed in the management of these cases, will bring some splendid results.



THE CHANGING VIEWS IN MEDICINE.

The Chicago Med. Record (September, 1923), in quoting Barry, calls attention to the astonishing change in the relation between doctors and the world that has taken place during the past half century. Once they were concerned almost wholly with the body. They placed their chief reliance on drugs. The mind and the spirit they left to the educators and to the clergy. With the decline in the appeal of religion, so notably illustrated, for example, by the popular indifference today to the reading of the Bible, the doctors began to take on something of the authority so long held by the church and by the schools. At the same time they were beginning to appreciate as they had never done before the way the body and the mind work together and influence each other.

TREATMENT OF TUBERCULOSIS.

BY

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The treatment of tuberculosis offers certain problems to the attending physician which are not usually present when he is called upon to deal with other constitutional diseases. We know that the *spirocheta pallida* is the casual organism of syphilis, and that malarial fever is due to the presence in the blood of the plasmodium introduced by the bite of the *Anopheles* mosquito. We have an efficient weapon for fighting syphilitic infection in the arsphenamin group of arsenicals; and for malaria, quinine and other cinchona alkaloids are specific.

The problem with tuberculosis is, however, quite different. Tho we know well enough what causes the disease we have nothing specific which can destroy the tubercle bacilli without also destroying the patient. Even the so-called "Specific treatment" of tuberculosis is still open to question.

The peculiar problems in the treatment of tuberculosis are therefore: (1) To increase the systemic resistance of the patient to the poison of the tubercle bacilli; (2) to promote connective-tissue building and cicatrization; and (3) to influence the tuberculous area in such a way as to effect a spontaneous cure.

Prophylactic treatment of tuberculosis should begin at birth. Even if born of tuberculous parents, the new-born baby is free from tuberculosis but if the baby is nursed by a tuberculous mother it may acquire the disease during its first year, in either acute or subacute form. Infants, therefore, should not be reared by tuberculous parents, and even if born into a

healthy family the baby should be safeguarded from every possible carrier of tuberculosis, for there are many people apparently in good health who are carriers and disseminators of tubercle bacilli. In general, every infant should be kept away from strangers and even from immediate relatives if they give any evidence of asthma or emphysema or have a chronic cough. Nurses should be very carefully examined before being engaged, and the milk of artificially-fed children closely scrutinized, care being taken to be sure that it does not come from tuberculous cows. The nursing baby does not contract the disease thru its mother's milk; the mother conveys it to him by speaking, coughing and kissing. Stanley L. Wang examined the milk of twenty-eight tuberculous women and injected it intraperitoneally into guinea pigs with negative results.

Weinberg gives statistics of 18,000 children from 5,000 families by which he shows that three-quarters of the children born during the last year of the tuberculous mother's life, die, while among children born during the last month of tuberculous mother's life, the percentage rises to ninety. Fishberg, investigating the children of tuberculous parents in New York, found the same condition. Armand Delille studied a series of 787 children in 175 families, one or more members of which were tuberculous. Of these children 323 were placed in the country and all did well. Of the 396 not removed, 328 contracted tuberculosis. It is evident that babies should be removed from the care of tuberculous parents at least during the first two years of life.

The prophylactic treatment of tuberculosis should, therefore, be directed against the infection of the young. Every adult has probably at some time in his life undergone an infection which has failed to develop be-

cause of the natural resistance of the system, and is consequently more or less immune. The tuberculous patient must guard against disseminating his sputum, as this is the chief cause of infection among children. When one of the parties contracting a marriage is tuberculous, procreation should be prevented.

The first requisite in the treatment of the tuberculous adult is complete candor on the part of the physician. The patient should always be told that he has the disease. The initial shock will soon wear off so that he becomes reconciled to his condition. It then becomes the physician's duty to imbue the patient with courage and hope, to stimulate his enthusiasm and persuade him to cooperate in all measures undertaken to arrest the disease. "The cheerful, enthusiastic, and optimistic physician," says Pottenger, "attains great results in the treatment of tuberculosis. He inspires his patients to a more exact cooperation, he inspires them with hope and courage, and thus relieves the cells of the central nervous system of needless and harmful irritation."

The patient's economic condition must also be borne in mind. It is not well to tell those of limited means about expensive resorts and sanatoriums, for they may brood over their inability to go to those places and think themselves doomed because they cannot afford such costly treatment. Rich patients may be sent to high-priced places, but the poor ones should be shown how to render their life comfortable even under adverse conditions.

The personal hygiene of every patient must be carefully supervised. His clothing must be examined; the room in which he sleeps inspected; even his bed coverings should receive attention. His diet must be regulated and detailed instructions for the proper disposal of his sputum must be given.

Insanitary habits should be observed and corrected. The necessity of giving up work must be impressed upon every patient even tho he protests that he is obliged to make a living; sympathetic arguments must be advanced to show that it is better for his future welfare that he cease work at present that his cure may be the more rapid and effective, the final result of which will be that he can resume work much sooner, with no chance of relapse.

Clothing.—The clothing should be regulated according to the state of the weather, neither too heavy nor too light. Chest protectors are abominations and should be discouraged. A tuberculous patient should wear wool next to the skin, as wool absorbs perspiration and keeps the body dry, while cotton quickly becomes saturated and chills the body. The question of the proper temperature for baths often rises. I believe that warm baths are much better borne by tuberculous patients than cold.

Smoking.—The advisability of permitting a patient to smoke depends upon his customary habit. I do not take tobacco away from an inveterate smoker, but permit some smoking within definite limits. It should be done in the open air, and a long stemmed pipe or long cigarette-holder used.

Diet.—In feeding tuberculous patients, the diet must be individualized, and the personal equation of each patient borne in mind. The feeding must be done with a view to replenishing the waste that is constantly going on; a patient with anorexia fever and consequent emaciation, needs plenty of food. The food must appeal to the palate and be prepared and served in a tempting manner for it is usually only under those conditions that a patient can be made to eat. Individuals of different nationalities are used to their own peculiar kind of food, and to put them on a strange diet

would be to defeat the very purpose for which the food is given. Economic conditions must be considered and for poor patients, no expensive food need usually be prescribed, for inexpensive food can be prepared and served attractively. The patient should be consulted and given the food he likes and to which he is used.

Overfeeding, or forced feeding, is not advisable. If we can maintain the weight at the figure it attained before the disease was contracted we are doing as well as can be expected. In feeding a tuberculous patient, the aim should be to strengthen him and to improve his resistance to disease, rather than to fatten him. It has been shown that patients may be fattened by forced feeding, without in the least influencing the tuberculous lesion. To routinely tell every patient to eat eggs and drink milk is not advisable, for there are some people who are always unable to digest eggs and milk, and naturally cannot tolerate them in disease. Meat, on the other hand, can usually be easily digested by such individuals. There is no food which is contraindicated in non-complicated phthisis, tho it is essential that all articles of diet be prepared properly and well served.

Work.—Only those thoroly convalescent should be allowed to do some work. Those in whom the disease is arrested may return to their old occupations, providing the work is done in a well-ventilated place where there is no dust. A tuberculous convalescent should never work with fur, or in a pottery, or engage in any dusty work, and the working hours should not be so long as to be tiring.

It is said that very few of those employed in our subways are afflicted with tuberculosis, and the same is reported of the subway employees in London. It would seem that employment as a guard or ticket-

chopper in a subway would be desirable for a "cured" tuberculous individual. In incipient and febrile cases the patients must give up all work and have complete physical and mental rest. Nature's mode of curing disease is by means of rest. A tuberculous patient who has temperature, anorexia and tachycardia must be put to bed, and even afebrile subacute or incipient cases with rapid pulse, dyspnea and cough should be placed where they can rest. The extent of the lesion is not always the criterion for the amount of rest desirable, for some patients with comparatively mild lesions exhibit enough physical signs to make rest in bed desirable. On the other hand, there are many patients with extensive lesion who show so few physical signs that the wisdom of the physician is taxed to the utmost to decide whether the patient may continue his work or should be put to bed. In cases where cicatrization is progressing, where there is no temperature, nor acceleration of the pulse rate, it is advisable that the patient engage in some occupation which is not exhausting. Often, in such cases, employment acts magically in hastening a cure. There are many consumptives who would succumb to the disease if they were not given some occupation. Those who are kept at rest for a long period tend to become hypochondriacs; they fear the least exertion, and in the words of Herman Biggs, "from sick workmen they become healthy loafers." All work should be carefully graduated and a certain amount prescribed daily, increasing as the patient's condition warrants. Indoor and outdoor amusement which entails some physical exercise may usually be permitted, especially for those who have no fever nor palpitation of the heart.

Open-air Treatment.—Of open-air treatment I can only say here that while this

therapy has many adherents who believe it to be the only way of handling tuberculosis, other clinicians of vast experience are by no means enthusiastic about it, often feeling that it is being overdone, in many cases with disastrous results. Yet open-air treatment has really very few contraindications, and, if carefully and properly carried out, is probably one of the best methods of combating tuberculosis.

Heliotherapy.—Exposure to the sun's rays has proved a valuable curative agent in certain afebrile and convalescing cases. It is a question, however, whether it is not largely the psychic effect which is beneficial, the patient's feeling that something is being done for him; for direct sunlight, the application of the ultra-violet rays, Roentgen rays, and quartz light, have all been used experimentally by numerous observers and have proved, not only ineffective, but, if given promiscuously, actually deleterious. It seems probable, therefore, that those who are apparently improved by these measures would be just as much benefited by any other therapeutic measures, because the effect is purely psychic.

Climatic Treatment.—It is at present generally conceded that the beneficial effects of certain climates upon the progress of phthisis, have in the past been greatly over-rated. "Mountain air" or any other air is not necessarily curative in tuberculosis. A tuberculous person can be cured in any place, providing the environment is right, and the patient feels happy in his surroundings and entertains hope of recovery. For here, as in most other therapeutic measures, it is the psychic effect that counts most and serves to further the cure. Some tuberculous patients may be in the most ideal home environment and yet go down grade until a change of conditions is effected. The new conditions may not be so good as the

old, yet a marked improvement at once begins because they feel so much happier at the change that there is a rejuvenation and a stimulation of all reparative processes often bringing about complete recovery. The climatic treatment of tuberculosis does not depend upon the climate, but upon placing the patient in a congenial environment, or at least one that he believes will act as a panacea to his ailment.

Fishberg cites cases of immigrants who came over to this country and contracted tuberculosis. Tho they were made very comfortable and properly cared for, they were not happy, and were steadily losing. They longed for their native country, in most of the cases, either Russia or Poland, and felt sure that they could be cured only at home. Those who went back to their own country did actually begin to mend, and frequently came back to the United States cured. Yet the most revolting conditions prevailed in Russia and Poland; there was scarcity of food and clothing, and absence of all things which render life comfortable; moreover, tuberculosis was rampant there. Yet such is the psychology of the tuberculous patient. Ideal surroundings do not always help; it is the place which he *thinks* will cure him that most often tends to arrest the disease.

Medicinal Treatment.—Of old, creosote was considered a specific for all forms of tuberculosis. It was supposed to act directly upon the intestinal tract, destroying the tubercle bacilli which every consumptive necessarily swallows. Administered in very large doses, it caused a great deal of harm, and thus fell into disrepute, until about twenty-five years ago, when it was again taken up by the medical profession. We now realize that it is useful in small doses for incipient cases, or where there is anorexia because of digestive disturb-

ances. It sometimes produces a reaction similar to that caused by tuberculin, and because of its odor it is not well tolerated by many, so that guaiacol carbonate, which is a derivative of creosote, is now generally employed instead. Guaiacol carbonate should not, however, be used in congestive cases with hemoptysis. Creosote carbonate or creosotal, is practically a odorless derivative of creosote and can be given, five to ten drops in capsules several times a day; it splits up in the intestines, liberating creosote.

Thiocol (potassium guaiacol-sulphonate) is given in ten to fifteen grain doses. It is odorless, tasteless, non-toxic, and soluble in water, but presents the objection that it is very expensive, and not quite certain in its action.

Ichthyol influences metabolism and prevents albuminous decomposition. It is given in two to five drops t. i. d. It is best to begin with very small amounts, gradually increasing the dose.

Arsenic has been used in all wasting diseases, from time immemorial. In phthisis, it acts as an alterative and reconstructive, stimulating general nutrition, as well as that of the nervous system. It has no direct effect upon the tuberculous lesion, but improves the resistance of the system against the disease. Various preparations of arsenic are used, by mouth, subcutaneously, and intravenously. In Germany they have a great number of arsenicals, which are used intravenously, and in this connection, I want to mention a German preparation known as Krysolan, containing a sodium salt of amino-orthophenol and carbonate of gold. The Germans ascribe to it, specific virtues and use it intravenously in all febrile cases. It is given once in eight or ten days and in the interval the usual remedies are employed.

Iodin has also been used for generations.

It is very effectual upon children with tuberculous glands, and has given good results in pleurisy, asthma and emphysema. It also acts well in bone tuberculosis. The tincture is used extensively, beginning with a drop in a glass of milk, and gradually increasing the dose. Potassium iodid is given in five to ten grain doses and a saturated solution of KI may be administered, a very small initial dose being gradually increased to about ten drops, thereafter continuing the same dosage.

Mercury is another "old stand-by" in tuberculosis, and is excellent when there is a complicating syphilis; otherwise it does harm by salivating the patient.

Hypophosphites and glycerophosphates are used very extensively, with calcium, for in phthisis, there is a loss of mineral salts and the different minerals are supplied in combination with these preparations.

Cod-Liver oil is a time-honored remedy for tuberculosis, for the doctors of old had great confidence in its therapeutic virtues which were at one time ascribed to the presence of iodin in the oil. Recent studies in the physiology of the internal secretions have thrown light on the true action of cod-liver oil. Williams says, "the superiority of this oil over others is due to the internal secretion of the liver of the fish which, when introduced in the human system, acts upon the internal secretory glands, and the secretion of the glands so stimulated is inimical to the development of tubercle bacilli." Cod-liver oil should be given in afebrile cases only. Children, especially, take it well and are greatly benefited by it.

Specific Treatment.—The advocates of this form of treatment believe that it actually produces a specific effect by stimulating the production of defensive bodies in the blood of tuberculous patient, while its opponents just as earnestly assert that whatever

benefit the patient may derive from it is due to its psychic effect, because the patient believes that something extraordinary is being done to further his cure, and that besides doing no actual good, it may do positive harm in certain cases.

Fishberg, speaking against the use of tuberculin, says, "It cannot be specific, because a specific is a remedy which has a positive effect upon a disease. Tuberculin has not that effect. In small doses it is ineffective, in large doses it is harmful. The fact that there are a great many varieties of tuberculins, speaks against its specificity. Of a specific remedy there are not a great many varieties. Its administration is not laid down with any degree of exactitude." Every worker gives it in his own way, and the same is true of the dosage, different workers are using different amounts. In experimental work, no tuberculous animal has been cured by tuberculin. There is also the possibility that tuberculin will awaken a dormant process and thus do actual harm. If certain cases have been benefited by tuberculin treatment it is because of the psychic effect and, all things being equal, the patient will be just as much benefited by any other remedy.

On the other hand, Pottenger says that "there is error in thinking that tuberculin acts as a foreign body when administered, as any foreign protein would act." Tuberculin, tho artificially prepared, is the same defensive product that every tuberculous patient is constantly setting free in his body. There would be no recovery if it were not for these defensive products, for they stimulate the body cells to the production of a specific defense, and by exciting the focus of infection, hasten the production of fibrous tissue. A high degree of immunity is developed in every tuberculous patient, because of the liberation of these products,

and if it were not for this immunity, the disease would spread very rapidly, death resulting in every case. The fact that animals, experimentally, have not been cured by tuberculin is because they present a virgin soil for infection, just as do the American Indian, the negro or the Icelander.

When abroad, it was my good fortune to work a number of months with Dr. Henius, an authority on tuberculosis, who is director of the Division of the Department of Tuberculosis of the Charité in Berlin. While there, I had the opportunity to observe a great many tuberculous patients, undergoing treatment with tuberculin, and myself, treated quite a number so that I can testify that the results, almost in every case, have been excellent. Because of the very bad economic conditions which prevail in Germany, material was abundant, but the most astonishing thing is that, despite the poor conditions, the number of improved and arrested cases was little short of marvelous. In Germany the psychology of the patient plays an important rôle in this treatment, more so, I think, than in any other place in the world.

Nowhere else have the physicians succeeded in inspiring their patients with so much trust and confidence. The German patient cooperates fully and implicitly with his physician. The "Doctor's order" is law to him, and is carried out to the letter.

The food in Germany is scanty, and the kind eaten by the poor is execrable, yet tho that furnished to the patients in the Charité is beyond description in its scantiness and in its wretched quality, the German patient eats that revolting food as faithfully, and with as much gusto, as he takes his medicine, because the physician tells him that it will benefit him and it does benefit him so that he actually gains in weight. He submits

to all tests and treatments without protest, never murmuring no matter how much suffering it may entail, and all because he has such perfect confidence, that his doctor is doing his best to cure him. Moreover, the German physicians are very conscientious, and exceedingly painstaking, and really do accomplish wonders in the treatment of tuberculosis.

The Cases Suitable for Tuberculin Treatment Are.—(1) All afebrile cases and the mild catarrhal conditions where there is little involvement, even if there is an evening temperature; (2) glandular tuberculosis, or scrofula; (3) tuberculosis of the serous membranes; (4) chronic ulcerative tuberculosis which yields to no treatment; (5) toxemia patients may be benefited by the cautious use of tuberculin, which establishes increased tolerance to toxin.

Pottenger says, "From my conception of tuberculin and its action, I can conceive of few conditions where tuberculosis is present, where tuberculin may not be used to advantage. It may be used to advantage wherever any other therapeutic measure can be used advantageously." In all tuberculous cases with serious complications, the use of tuberculin is contraindicated, and it should be withheld in cases complicated by influenza, pneumonia, hemoptysis, and in all cases of tuberculosis with toxemia.

The Preparations of Tuberculin.—The tuberculin commonly used is that of Koch, the "old tuberculin"; it is a glycerine extract of tubercle bacilli. We also have Béranec's tuberculin, Spengler's tuberculin and many others, but in Germany they use the "old Koch tuberculin" almost exclusively. The Friedman Turtle tuberculin has been tried out there and found not even to produce any reaction.

Dosage.—Tuberculin is given diluted in normal salt solution or in sterile distilled

water and if the solution is to be kept for some time one-half of one to one per cent. of phenol is added. The initial dose should be very small—about 1:100,000 dilution—and one- to two-tenths of a centimeter injected, a careful watch being maintained for the reaction. It is subcutaneously administered and can be injected into any part of the body; in Germany the injection is made in some part of the anterior chest. Should there be a strong reaction, a few days must be permitted to elapse before another dose of greater dilution is given, but if no reaction takes place within three or four days, another injection is made, this time of lesser dilution, and if there is still no reaction, the third injection is of still less dilution. This plan is followed until a reaction takes place. The injections are then made every ten days or two weeks, the dose remaining the same.

The duration of treatment depends upon the patient's progress. If the disease is arrested, the tuberculin treatment may be discontinued for two or three months, and thereafter resumed for a shorter or longer period. When tubercle bacilli disappear from the sputum, when cough and expectoration cease, when there is no fever and all physical signs have cleared up, tuberculin administration may be discontinued entirely, and the patient merely kept under observation for some time longer. If after an extended period, there is no evidence of relapse, as proved by a thoro fluoroscopic, roentgenologic and other examinations, the patient may be discharged as cured.

Treatment by Artificial Pneumothorax.—C. Farlanini of Pavia was the first to introduce pneumothorax in 1894, but independently of Farlanini, John B. Murphy of Chicago made use of it in 1898. No general attention was paid by the medical profession to this mode of treatment until

Bauer, Spengler and others took it up in Germany where at present this method is particularly in vogue. Fishberg remarks "that it is a valuable method of treatment, will be appreciated when it is borne in mind that it is mostly indicated in cases in which everything else has been tried and found wanting." The principle underlying artificial pneumothorax is to immobilize the affected lung so as to imitate Nature's mode of cure. In early cases we may hope to have only a mild febrile affection which is the ideal stage at which to do an artificial pneumothorax. To reserve pneumothorax for those cases "in which everything else has been tried and found wanting," that is, cases of a progressive type in which both sides are usually involved, means just the type of cases, in which artificial pneumothorax is contraindicated. Dr. Henius advocates artificial pneumothorax only in the early stages, and in my own limited observations on a series of fifty cases of artificial pneumothorax, I found that it is the early type which lends itself most effectively to this form of treatment. Pottenger, while advocating pneumothorax for all, lays particular stress on its value in early cases.

Indications for Pneumothorax:

1. Every one-sided tuberculosis, where the apex and one lobe are affected.
2. All one-sided cases in which the other side, while slightly affected presents a chronic, non-progressive type of the disease.
3. Acute destructive tuberculosis with cicatrization.
4. Cases of the type described by Fishberg where "everything else was tried and found wanting." In these cases a pneumothorax may be induced on the side that is most affected but it must be done by one of wide experience, and possessed of great knowledge of the pathology and symptomatology of tuberculosis.
5. Dry pleurisy, with pains, where a little air—about 200 c. c.—will relieve the pain by separating the pleura.

6. Pleurisy with serous effusion; about 100 c. c. of air being put in, and the thorax fluoroscoped; if the exudate assumes a straight line, there are evidently no adhesions and the fluid is then aspirated and a pneumothorax done.

7. In pneumopericarditis which gives severe pain a little air will relieve the condition.

Artificial pneumothorax is sometimes undertaken for diagnostic purposes, and in suspected pulmonary tumors a pneumothorax will collapse the lung around the tumor, thus outlining it very sharply.

The contraindications for inducing artificial pneumothorax are:

1. Intestinal tuberculosis.
2. Diabetes.
3. Heart disease (tho a tubercular heart, may not always be a contraindication).
4. All cases having severe complications.

The complications in artificial pneumothorax are:

1. Air embolus.
2. Serous pleuritis.
3. Emphysema of the skin and mediastinum.

Technic.—The patient must be thoroly examined both roentgenologically and fluoroscopically, and reassured that the operation is a painless one. It is wise to explain the procedure to an intelligent patient, for he soon realizes that he is to gain a great deal by this operation, so that he becomes anxious for it, and submits to it with good will. Once he understands that the success of the operation depends upon his cooperation and feels that he may himself be to blame if it fails he will become docile and submit to the procedure without a murmur. He must be instructed not to cough thruout the entire time of the operation, and also for some time afterward, and it is remarkable how those with hacking and incessant coughs, when the danger of coughing is explained, will cease coughing during and after the operation. In many cases of my own and those of others that I watched, no patient ever disobeyed the injunction not to cough.

In cases where the X-ray and fluoroscope show no adhesion, the place of puncture is

usually in the fifth or sixth intercostal space, between the anterior and posterior axillary lines. In cases with adhesions, one must be guided by the findings of percussion. The air can be injected in any place where the needle is able to enter the pleural cavity, tho on the left side, care must be taken not to puncture the heart. The place of puncture, including pleura, must be thoroly anesthetized, the anesthesia being done with a two per cent. solution of novocain. The room in which the operation is performed must be well heated and all appliances must be warm. Iodine is used as antiseptic. In Germany the Henius needle is largely used; this is quite a thick needle, about two and one-half inches long, with a cuff at the head so that the fingers do not come in contact with that portion of the needle which goes into the chest. Attached to the tubing is a hollow obturator which is drawn into the needle when the puncture is done. As soon as the pleura is punctured, the obturator is pushed down, the monometer showing by the negative pressure whether the pleural cavity has been entered, as the fluid will press in the direction of the needle. The patient is then told to breathe, and if the needle is in the pleural cavity, there will be violent scillations of the fluid in the monometer. Sometimes the needle strikes bands of adhesions, and it becomes necessary to select another place for the puncture.

Ordinary air is now being very generally injected. The initial injection should be between 200 and 300 c. c. of air, tho some patients can safely receive a great deal more than others. The patient is instructed to tell when he feels the pressure, and he usually tells in time. At the beginning a filling is done every three days; later on, every week or two, and still later, the procedure is carried out only every two or three

months. At this stage, the patient is usually able to go about his business. When in Berlin I knew a number of army officers who had contracted tuberculosis during the war. They would report every two months for a filling and in the interim they led a very active army life. After an artificial pneumothorax, the patient should rest a few hours, altho I have seen scores of them coming for a filling and going about their business immediately afterward. I observed numerous cases in which pneumothorax had been done and I myself performed it on fifty individuals, at no time seeing any serious complications as a result of the operation. The worst that ever happened was emphysema of the skin, which cleared up in a few days. In inducing pneumothorax there must always be complete roentgenologic and fluoroscopic control.

In conclusion I wish to mention the wonderful work that is being done in Germany in thoracoscopy, as advocated by Professor Jacobaeus, who used thoracoscopy for severing strands and bands of adhesions in tuberculosis. The Germans do all this, but go a step further, cauterizing lesions in the lungs, and actually using local applications for the purpose of stimulating the formation of fibrous tissue and cicatrization. The work in this field is as yet very recent and experimental, but I think it promises to become a very great factor in the treatment of tuberculosis.

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LINCOLN'S ADVICE.

"Do not worry; eat three square meals a day; say your prayers; be courteous to your creditors; keep your digestion good; exercise; go slow and easy. Maybe there are other things that your special case requires to make you happy, but, my friend, these I reckon will give you a lift."—(Abraham Lincoln.)

GLAND TRANSPLANTING BY SYRINGE INJECTION OF THE GLANDULAR TISSUES.

BY

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During the past few years much interest has been manifested in gland transplants. While considerable has been written upon the subject there has been a tendency to maintain the mystery element by vague hints from some operators as to technic, these surgeons conveying the impression that when they are ready to make full reports that they will be found to have been using a special technic and instruments which enable them to do a better transplantation than the profession suspects possible. Of course, the surgeon himself is not deceived by such a policy and knows that the operator who thus pretends to have a method which he will later reveal will probably never contribute much to surgery. Nevertheless, the status of gland transplantation in the minds of the general profession is not that which it should be. The impression prevails that transplanting of organs and parts is particularly difficult and to be successful calls for an exceedingly delicate and difficult technic. As a matter of fact, we all know that epiblastic cells lend themselves best to transplanting and that the physiology of the glands makes it plain that most of them can be effectually transplanted and adequate blood supply developed about them provided they are not transplanted in too large masses.

When we consider the subject of skin grafting which, of course, having been used for a great many years has given opportunity for much observation under every variety of circumstances, we realize that these epiblastic cells thrive most luxuriantly

when transplanted in the thinnest possible layers. No one who has transplanted thick layers of skin or the entire thickness of the skin and seen how poorly such transplants develop in contrast with those which are made exceedingly thin, can fail to believe that if a maximum of effect is desired from gland transplants that the technic which will give the greatest area of contact of gland cells to vascular tissues will give much the greatest degree of success.

The character of circulation to which gland cells are accustomed is very much like that which they receive when transplanted in very small masses. In contrast, cells transplanted *en masse* are likely to be very much undernourished, only those at the surface of the mass receiving anything like the amount of blood to which they have been accustomed.

Those surgeons who pretend to effect direct arterial connections and to re-establish the arterial and venous circulation of the gland transplanted realize that as a rule their efforts in this respect will fail and that the gland mass will be tolerated in its new situation and develop more or less peripheral circulation. In such cases the cells of the mass within are so undernourished as to be but a detriment to those which receive circulation, therefore eliminating the sentimental desire to transplant the entire organ, the writer believes that the greatest possible number of active cells are likely to result from the greatest possible division of the gland mass and the widest possible distribution of these cells. To transplant the gland without removing its capsular coverings is almost like imbedding a foreign body in the tissues. To cut up and dispose of the gland in many thin slices requires considerable dissection. Open operations are more or less bloody, infection is hard to completely guard against, and infection, of course, will

destroy all grafts if it occurs. It, therefore, appeals to the writer to operate with the syringe rather than by open incision. Such operations require but a minute or two—they are bloodless, can be performed without anesthesia and be made entirely painless if the point of needle entrance be lightly frozen. The patient can submit to such operation with no more disturbance than he would to an ordinary office visit. He need not even disrobe or lie down for that matter, as the injection can be made as con-

veniently with the patient standing as in any other position.

That the gland cells withstand such treatment without material injury is not surprising as the gland mass does not require a great deal of pressure to be forced thru the larger caliber aspirating needles. The writer has deemed the seventeen gauge aspirating needle large enough.

The gland itself should be removed immediately before injection. The donor should

be in a room immediately adjoining the recipient. The region of the gland should be sterilized and the area over the injection site treated similarly. Both areas should then be well coated with iodine solution. The gland when removed should be stripped of its capsular coverings, cut into small bits and dropped into the open barrel of the syringe. The piston should be inserted and screwed down. The first emission from the syringe is largely blood serum. This may or may not be injected as the operator



Figs. 1. Syringe used in gland transplantation. The gland stripped of its fibrous capsule is cut into small pieces and dropped into the barrel of the disassembled syringe. The screw piston is then turned down upon it and the gland cells injected at the point selected by the surgeon.

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elects. The point of the needle should be inserted into the subcutaneous tissues and kept constantly moving during the injection, the object of the operator being to diffuse the gland cells widely thru the tissues. The injection technic enables the operator to superimpose layers of grafts in the same region with living tissue between. When the injection is completed the needle is withdrawn and the puncture sealed with collodion. No subsequent dressings are re-

quired. The patient should be advised to avoid overactivity but no confinement is necessary.

Some years ago the writer attempted to develop a system of skin-grafting which would give grafts a more natural appearance and make them more suitable for operations upon the face. In these experiments he cut them in various ways, rolled them, flattened them and abused them generally to a degree which the ordinary person would think would destroy their vitality, yet as a matter of fact these cells when properly placed thrived just as much as they would have had they been handled in the most careful manner possible. So with the gland cells, the writer believes the slight pressure necessary to force them thru a large needle will in no way interfere with their subsequent vitality and one may get just as much effect from their continued vitality as one could expect from their successful transplanting by open operation. It is certain that this injection technic is exceedingly simple and has the advantage of greatly reducing the likelihood of infection.

CAN SYPHILIS BE PREVENTED BY CHEMICAL AGENTS?

BY

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During the period of the great war, while attached to the syphilitic wards of Cochin Hospital, in company with other genito-urinary clinics, we made a compilation of statistics relative to the increase of syphilis up to that period (November, 1917). Whereas before the war, three in every one hundred applicants for admission to the hospitals of Paris were afflicted with syphilis, at the period named we found that twenty-one in every one hundred were inflicted, showing an increase of sevenfold!

The unprecedented increase of this malady in Europe since 1914 has attracted the serious attention of several governments, and experimental laboratory study of every aspect of this disease is more general at the present period than at any previous time in history; not only is there great activity in the search for new remedies and the modification of old ones that will make them more active, less dangerous and more easily applied, but there has recently appeared in the medical press accounts of hopeful experiments in the prophylaxis of this disease.

Can a medication be found that will make the human subject immune to syphilis?

It is obvious that the tendency of modern thought in medicine is more and more to the prevention than to the cure of disease. If one passes in general review the experimental work of the last twenty years, one finds that there has been created a marked advance in social hygiene and in measures

Infant Feeding: Facts and Fallacies.— Burnet (*Archives of Pediatrics*, February, 1923) shows that many fallacies are allowed to creep in the feeding of cows' milk and its preparation. The milk should generally be diluted to reduce the protein. Plain water is the best diluent. Sugar is by no means necessary for every infant and it may cause digestive trouble; there is absolutely no need for milk sugar, which may cause indigestion in some cases. The use of cream is rarely necessary and the author prefers to use a good milk in which there is a proper amount of fat. The author believes in simplicity in infant feeding, with which he has obtained good results.

of general and individual prophylaxis; while in the department of therapeutics there has been an incessant search for chemical or bacteriologic affinities for each infectious agent. This particular field of therapeutics has made enormous progress in two totally different directions.

Under the influence and teachings of Pasteur we have been led into the field of bacteriologic therapeutics, until in the present day we are in the midst of a prodigious development of serum-therapy and vaccino-therapy, in which our progress is far from being terminated.

On the other hand, under the teachings and influence of Ehrlich chemico-therapy has made great advances, probably not so great as serum-therapy, but sufficient to show us that it holds vast unexplored possibilities.

The greater progress of serum-therapy can in a large degree be attributed to our wider and more intimate acquaintance with infectious agents. We have already determined for certain serums not only their antitoxic units, but also their therapeutic and prophylactic action, and there is a movement which is becoming general to correlate chemico-therapy in the same relationships.

It is a fact that these therapeutic units are based on a standardization of infection. The problem has been solved *in vitro* by Levy-Bruhl.¹

There is no reason for supposing that it is impossible to realize the same standardization in the domain of chemico-therapy, and it is in this domain that search is being made for the prophylaxis of syphilis.

Serum-therapy was at first exclusively therapeutic, but soon became prophylactic. The realization in chemico-therapy of the prophylaxis of malaria by quinine opens up a vista of possibilities that is illimitable.

Our exact knowledge of the powerful, specific action of the arsено-benzines upon the spirilla of syphilis has given birth to the hope that we will soon find an arsenical preparation that will act as a preventive in this disease.

The first study of arsenic as an agent of prevention was made by an English physician, Magian, who after injecting himself intravenously with 0.6 gm. of arsenobenzol voluntarily inoculated himself with the serum taken from a recent chancre without incurring the disease.

An abortive treatment of syphilis was studied by Brocq,² who believed that every subject who had been exposed to contagion ought to receive intravenous treatment with arsenobenzol.

The experience of Doctor Magian would seem to argue in favor of this proposal, altho it must be conceded that one experience alone is insufficient upon which to establish a fixed precedent. But the two preceding experiences or studies were developed upon much broader bases by the work of Balzar, Darier and Thibierge.³ These pioneer experiments were still more elaborated and made more precise by the work of Fournier and Guenot.⁴ These authors reported experiments upon 45 cases, their studies being attended by all of the conditions necessary to give value to a well-conducted line of experimentation.

As to the antecedent syphilitic contact there existed no doubt, each of the cases being a woman who had had sexual connection with a male possessing active syphilitic lesions, verified by ultramicroscopic examinations which showed the indubitable existence in each case of the treponemas in the serosites. The Bordet-Wassermann reaction was positive in every male case except one, whose chancre dated less than the classic period of ten days.

The women, however, showed a negative reaction to the Bordet-Wassermann excepting one, who became secondarily positive after the arsenical treatment, which in this case probably acted as a reactivation because it was learned that this woman had suffered an abortion of probable syphilitic origin a few years previously.

The prophylactic abortive treatment consists in the intravenous injection of a total of 1 gm. to 1.2 gm. of arsenobenzol; 1.2 to 2 gm. of novarsenobenzol or 0.65 gm. to 1 gm. of luargol. The feeblest dose was used in a case that presented almost immediately after contamination and received 0 gr. 60 of arsenobenzol equally divided in two injections. The remarkable fact attached to these experiments is, that with the exception of the single case noted, not one of these women presented the ulterior signs of syphilis and the greater part of the number were under observation for a period of from two to three years.

Five women, similarly exposed to contamination under conditions identical to those preceding, who refused preventive treatment were all affected with syphilitic lesion in the normal length of time. Another interesting and instructive fact brought out during these experiments was that one woman who submitted to the preventive treatment and remained unaffected, having later resumed relations with her lover possessed of contagious lesions herself contracted a syphilitic chancre.

In the exposition of the results of these experiments the only exception made by the authors to the universal application of this treatment is the possible existence in some cases of arsenoresistant treponemas, but in consideration of the extreme rarity of these cases it would seem reasonable to believe that their conclusions are well founded, *viz.*, "The systematic application during the

presumed period of incubation of an abortive treatment by arsenobenzol 2 gm. to 2.50 gm. in 6 to 8 injections) becomes without any doubt an element of greatest value in social prophylaxis against syphilis."

In spite of these convincing results which have since been confirmed by other experimenters and particularly by Levy-Bing, Gerbey, Spillmann and in an interesting case of an infant subjected to contamination treated by Laurent, the general practice of antisyphilitic prophylactic medication is almost unknown and would seem necessary for its general application that we should have a compulsory law, as we had for antityphic vaccination during the war.

In company with many others, I believe that the difficulties attached to the intravenous injections, sometimes followed by disagreeable reactions, are largely to be blamed for the practical ignoring of preventive treatment. The fact of this objection and the difficulties which incidental to this particular treatment have led to a series of laboratory studies in search for a remedy that can be administered by ingestion instead of by injection.

The first of these experiments was made with fowls. A chicken was infected with 0.5 c. c. of blood rich in the spirilla of syphilis, simultaneously a subcutaneous injection was made of 0.2 gm. of the product 190 (oxyaminophenylarsinique). *These fowls did not contract the disease.* With 0.1 gm. only of the product, the result was the same, but with the exception that the preventive injection was made four days before the infection.

The therapeutic results of these experiments show that the minimum curative and preventive dose of the soda salt of the acid oxyaminophenylarsinique is approximately 0.5 gm.

In experimental syphilis 190 in aqueous

solution is tolerated in the maximum dose of 0.4 gm. given by subcutaneous injections, 0.25 gm. given by intravenous injections.

In point of view of prophylaxis Levaditi and Navarro-Martin in collaboration with A. Marie secured the same results with 190 as those secured by Magian in England.

A subject 25 years of age who voluntarily submitted to the experiment was inoculated with syphilitic serum by scarification of the two arms the 3rd day of February, 1922. Two hours and a half and six hours later this subject was given 2 gm. of 190 by the mouth—a total of 4 gm.

An ape was at the same time inoculated with the same virus.

The subject who submitted to the experiment was under observation for forty-seven days and gave no evidence whatsoever of the disease, and the Bordet-Wassermann remained continually negative, whereas the ape produced a typical chancre in the ordinary period of time.

This experiment demonstrated the preventive qualities of the acid of oxyaminophenylarsinique salt of soda when administered by the buccal route.

Fournier, Guenot and Shwarts published in the *Annales of the Pasteur Institute*,⁵ the results of their experiments in the treatment of syphilis in the human subject by the remedy 190. I will not go into the details of this work, which is possessed of great interest, because it is directed wholly to curative and not prophylactic measures. Their work showed this remedy equal in its early results to the results obtained by arseno and novarsenobenzol, but its action does not seem as profound nor as lasting.

By a concerted arrangement Levaditi and Navarro-Martin⁶ undertook a line of experimental work in company with Fournier, Guenot and Shwarts⁷ who undertook the

clinical study of 190 not only as a cure of syphilis but as a preventive of the disease. These experiments were conducted by giving the remedy entirely by the mouth.

The remedy procured the rapid and definitive cure of syphilitic lesions in both the rabbit and in the ape. The dose given by the mouth was practically the same as that given subcutaneously.

The therapeutic results in the human subject were tested in thirty cases of primary syphilis, 42 cases of secondary and eight cases of tertiary.

These cases were given an average of 1 gm. per day by the mouth for from five to seven days repeated after an interval of three days by the same dose, each case receiving from 13 to 16 gm. of the remedy.

The following cases are typical of them all:

Case I. Mme. X. came to the clinic accompanied by her husband, who presented a syphilitic chancre of the prepuce which he had had for three weeks. The ultramicroscopical examination of serum taken from the chancre demonstrated numerous treponemas. The woman stated that she had had sexual intercourse with her husband the night previously. A clinical examination of the woman discovered nothing abnormal and her Bordet-Wassermann was negative. She received in two series of three days each 7 gm. of 190 in doses of 1 gm. to 1.50 gm. each. She was immune from any syphilitic accident and her Bordet-Wassermann remained constantly negative.

Case II. Mme. Z., accompanied by her husband, who presented a chancre of the prepuce and with whom she had had repeated sexual intercourse; she presented no lesion upon examination and her Bordet-Wassermann was negative. She was given 6 gm. of 190 in five days; after three weeks she showed no syphilitic accident and her Bordet-Wassermann remained negative.

In experimental syphilis the preventive action of 190 was remarkable. The experiments were carried out after two different

manners of procedure. In one the scrotum of the animal was scarified with the infecting serum. In the other the unaffected female was placed in connection with males afflicted with syphilitic chancre. These experiments were carried out at the Pasteur Institute and at the Cochin Hospital. The affected animals were given by the digestive route 190, 2, 6, 12, 24 hours and up to seven days after the sexual connection and resulted in the prevention of the syphilitic lesions in both classes of infection.

These experiments satisfied the authors that the acid oxyaminophenylarsinique acted as a prophylactic in these animals.

We have previously signified the fact that Fournier and his colaborers have proven that the injection of novarsenobenzol acted as a prophylactic. These same authors experimented with 190 as a prophylactic in the human subject and in nine cases prevented the syphilitic lesions in nine women who had connection with their husbands, each of whom was possessed of chancres in which the treponemas were found. All of these women in whom the antecedents and the Bordet-Wassermann reaction was negative eliminated any possibility of anterior syphilis were treated by 190 administered by the mouth in a dose from 1 gm. to 1.50 gm. per day in a total of 4 to 7 gm. in a period from five to six days, and in no one of them did the syphilitic lesions appear.

It, therefore, seems probable that despite the restricted number of cases, that anti-syphilitic medical prophylaxis has been practically realized.

These authors make mention of the fact that those rare cases who are arsenoresistant would in all probability show unsuccessful results.

The action of 190 as a curative agent in

syphilis is less active and less certain than novarsenobenzol, and the frequency of relapse would not permit our adoption of 190 as a habitual treatment by the buccal route, but nevertheless its employment would be indicated where the intravenous injection is impossible, or where the patient is removed or is for any reason unable to have the necessary constant care of a doctor.

The results already obtained coupled with the facility of the administration, which is of capital importance, would lead us to hope that in the acid oxyaminophenylarsinique (190) we have found a remedy which, under medical supervision, can be recommended for general use as a reliable prophylactic for syphilis.

The urgent need for the employment of every means possible for the control and arrest of this malady has already resulted in the placing of this remedy in commerce in tablet form under the name of "Stovarsol," each tablet containing 25 cgms. of the acid. These tablets dissolve almost immediately in a small quantity of water and are not disagreeable to the taste.

Their use is recommended following any suspected intercourse by dissolving and taking three or four of the tablets in part of a glass of water half an hour before the first breakfast for three or four consecutive days, where from three to seven days have expired after the sexual connection the remedy is taken as above indicated and after an interval of three days is repeated in like form and this preventive treatment should be practiced right up to the limit of the classical period of incubation.

Doctor E. Marchoux, of the Pasteur Institute,⁸ has used this remedy with success in amebic dysentery. He commenced its use in a case in which the kystes persisted

after treatment by the emetine hydrochloride.

He found its action rapid in cases of kystes *d'amæba coli*. Three cases were completely cured after taking two tablets of 0.25 gm. with each of the two principal meals for ten successive days. His success was equally marked with the kystes *amæba dysenteriae*; two tablets per day were administered for twenty-days to a chronic case of four years' standing with complete success.

A young woman returned from Africa with amebic dysentery, having frequent mucosanguinal passages which left her in a prostrated condition. She was given two tablets per day. The second day her passages were reduced to four in number without pain. The third day she had but one with only a few filaments of blood. Three days later the condition of the patient's passages was normal and she began to improve in every respect. As a precaution she was given one tablet every two days for four weeks. She has had no relapse in several months.

In all, this author has treated ten cases, each one successful.

In view of the absorbing interest and newness of this subject I append a complete bibliography to date.

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54 Bdt. Victor Hugo.

The Relation of Albuminuria to Mercury.—When albumin is discovered in the urine always inquire if the patient is taking mercury.—*Exchange*.

The Most Important Factor in Mortality of Prostatectomy.—Inasmuch as the most important factor in the mortality of prostatectomy is renal incompetency, it is obvious that close attention to the renal function is essential if this mortality is to be kept down. For this reason too much regard for the renal function in a prostatectomy cannot be shown.—*Urologic & Cutaneous Review*, Sept., 1923.

MEDICAL PRACTICE IN INDIA.

BY

HARRIET FINCH RANDALL.

XII.

"My father, *hazur*, only take a look at him," implored a Hindu lad, dashing into the dispensary at seven in the morning.

"Bring him in," replied Dr. Jordan.

"He is not here, *hazur*."

"Why did you not bring him?"

"If he is to die, he must die in his own house."

"Is he very ill?"

"Yes, *hazur*. It is with difficulty that he breathes at all. His oldest son, my brother, is also sick. Kindly save him at least, as he must perform the funeral ceremonies for my father."

"In half an hour I will be there," promised Dr. Jordan.

Salaaming deeply, the loin-clothed youth departed.

* * * * *

Sounds of wailing reached Dr. Jordan's ears before he entered the village of Bandarganj. Several youngsters, clad only in their brown skins, sprang to their feet at his approach and *salaamed* hastily. "We will show you the way, *hazur*," and set off down the crooked path.

The wailing grew louder. Shrill screeches punctuated the monotonous dirge of grief. The children halted, pointing to the crowd before a mud hut. "This is it, *hazur*," they said with *salaams*.

The crowd opened to give entrance to the foreign doctor. On a brief bamboo stretcher lay a corpse, covered with the customary salmon-colored muslin. Two women were noisily tearing their hair, wringing their ears, and falling to the ground, each one careless of her loosely-draped garment.

An old man with beady black eyes peering out from a wrinkled skin stepped forward. "His day had come, *hazur*," he said. "But Chandu Ghosh, his oldest son, he it is whom you must cure. The funeral procession is waiting for him."

On a bare cot inside the murky hut lay the sick man, groaning loudly and regularly.

"Where do you feel ill?" queried Dr. Jordan.

"Everywhere, *hazur*. My head is very bad. My belly is entirely gone."

A careful examination showed no indication of disease.

"How long have you been ill?"

"Since the day after my father became worse."

"What food have you had?"

"Not any, *hazur*. If I am to die, why should I eat food? There is none too much for the others."

"The medicine I shall give you must be taken with milk and bread," dictated Dr. Jordan. "After taking that, you will feel quite all right."

When the mother appeared with the food, Dr. Jordan handed her the powder

At the edge of the river they halted. Removing the cloth they rested the stretcher just inside the edge of the stream. The bearers and the sons then went to prepare the pyre, while Hira, the old wife, dipped up a handful of the sacred Ganges water and poured it over the face of her dead husband.

When the body had been placed on the pyre, the women took squatting positions around it, Hira nearest, her two daughters-in-law at her right, the young wife off at a little distance.

Chandu Ghosh, so recently cured of his illness, now walked slowly seven times



(Courtesy of Presbyterian Board.)

The Funeral Ceremony.

on a piece of paper,¹ carefully keeping at a distance from the milk. With great satisfaction she mixed the powder in the milk as directed, and gave it to her son. "Now you will be all well and we can go on with the funeral," she encouraged him.

In less than an hour Chandu Ghosh appeared outside the hut, to take his place at the head of the procession.

Slowly the little party moved toward the river—the two sons ahead, followed by the salmon bier carried by two brothers of the dead man; behind came his old wife and his young wife and the wives of his two sons.

around the pyre,¹ scattering rice sparingly. The two wives then struck their glass bracelets against the wood, breaking them into bits, as an emblem of their desolation.

After their grief had subsided sufficiently, Hira applied the torch. The little party sat in silence. * * *

When the embers had died out, the men gathered up what was left and deposited it in Mother Ganges. Fish and turtles were waiting near.

* * * * *

Some two weeks later, on a visit to the village of Bandarganj, Dr. Jordan found a big feast in progress. A bright-eyed

urchin ventured an explanation. "It is the family of Chandu Ghosh, *hazur*. See? They are being purified after the death of his father. All the Brahmins are being fed. But Chandu Ghosh and all the relatives must eat *asafetida*. They have also been drinking something which I saw a Brahman prepare. He had Ganges water in a little bottle, and with this he mixed fresh cow's urine and milk. He chanted a hymn over it, and then let each one of the family take a good swallow. Um—um! Perhaps some day *my father* will die."

pathology of this vomiting. Moreover, in comparing, in the treatment of this affection, adrenalin and suprarenal extract, it is not taken sufficiently into account that one of these products is given in large doses and is effective, while the other is given in small doses and has no effect. The administration of adrenalin and of suprarenal products must be watched very closely by the physicians, as Bandler has pointed out. The appearance of pallor is a symptom of intolerance, and the drug must be given up or given in smaller doses.

Adrenalin should be given in isotonic solution, in Ringer's solution, or failing that, in physiologic serum. Isotonic solutions pass more quickly from the stomach into the intestine than non-isotonic.

Vignes calls attention to some dangers of hypodermic injection. He has seen many cases of scars following the injection of adrenalin for post-partum hemorrhage. A small scar is a disagreeable matter after injection of the 1-in-1000 solution, but a scar which spreads over the whole of the outer surface of the thigh is a disaster. Dilution in half a liter of physiologic serum, far from lessening the risk, only serves to increase the extent of the necrosed area.

How Adrenalin Should Be Given.—

Trias and Dorlencourt (*The Practitioner*, April, 1923) have called attention to some interesting points in connection with the administration of adrenalin.

It is quite legitimate to give the drug by the mouth, because it is absorbable. The ingestion of adrenalin sets up hyperglycemia in proportion to the amount taken.

The drug ought to be given in very concentrated solution, because the higher the concentration the more quickly absorption takes place. The use of a maximum of 10 c. c. as the solvent is recommended.

Ingestion should be made when fasting, because this allows rapid absorption and the use of a concentrated solution. Henri Vignes fully agrees with this on the strength of the results he has obtained in various gynecologic and obstetric cases treated by opotherapy.

The dose should be large, from five to ten times that given by injection. Vignes believes that 20 drops (1 mg.), a big one for an injection, is quite insufficient by the mouth. The doses usually active and tolerated are from 60 to 100 drops. In a case of attempted suicide 40 mg. were taken, but the subject only suffered from a temporary upset. The question of dose has some importance, for among the cases recorded of vomiting of pregnancy treated by adrenalin, the best results were obtained from the use of large doses, whatever opinion may be held with regard to the



The Function of the Pituitary.—The facts established concerning the functions of the posterior lobe of the pituitary, states an editorial writer in the *British Medical Journal* (April 28, 1923), indicate that they are curiously scattered. The internal secretion of this gland appears to be essential to the normal function of the kidney, for injury to the lobe is often associated with diabetes insipidus, and in a large proportion of cases of this disease the excessive urinary secretion can be inhibited by the administration of pituitary extract. Furthermore, Starling and Verney have recently shown that the isolated kidney secretes very dilute urine, but that the addition of pituitary extract to the perfused blood causes an increase in the concentration of the chlorides. The pituitary is also one of the glands that controls the concentration of blood sugar. Pituitary deficiency is associated with increased carbohydrate tolerance, and according to Burn pituitary extract has a stabilizing effect on the blood-sugar concentration, for, on the one hand, it inhibits the hyper-

glycemia produced by adrenalin or by ether anesthesia and, on the other hand, it inhibits the fall of blood sugar produced by the administration of insulin.

There seems, therefore, to be a fair amount of evidence that the posterior lobe of the pituitary gland secretes *in vivo* a uterine stimulant and also a substance essential for normal urinary secretion.

This gland contains in addition substances which can raise blood-pressure, which can lower blood-pressure, and which affect blood-sugar concentration. There is evidence that at least three separate substances are concerned in these manifold activities. We have, however, at present no evidence as to whether these curiously diverse activities are correlated in any way; as far as our present knowledge goes, the association of the different active principles in one gland may be purely accidental.

Endocrine Processes in Women.—

Franz, writing in the *Klinische Med. Wochenschrift*, says that the cyclic phenomena which characterize the uterine mucus membrane are a preparation for pregnancy. They synchronize with ovarian changes. The relation of the two cycles depends on the presence of some internal secretion, but nothing certain is known of the nature or the precise source of this secretion. The severity of menstruation has no relation to internal secretion; on the other hand, many forms of metrorrhagia, as well as puberty and climacteric flooding, stand in relation to it. In endometritis fungosa circulatory disturbances are present. In dysmenorrheal complaints almost invariably the cause lies in uterine incapacity, infantilism and narrowness of the cervical canal. These conditions cannot be influenced by organotherapy. Little is known as to the mode of action of climatic and balneologic treatment in gynecologic diseases caused by endocrine disturbances. The improvement often observed ought not to be considered as due to these influences alone.

The Relation of the Ductless Glands and Nerve Cell Activity.—

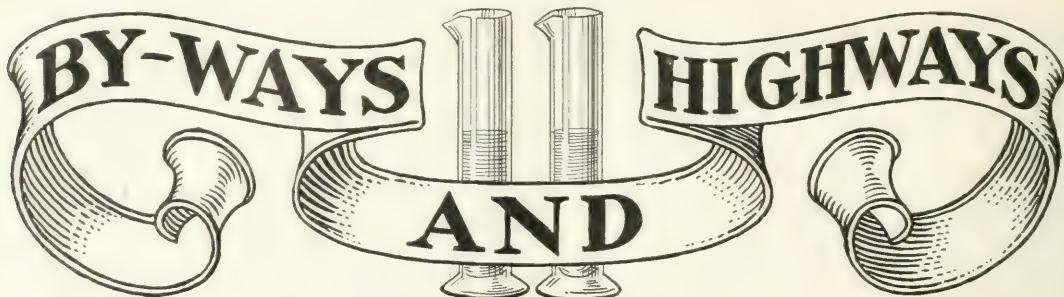
In studying the physiology of the cell there can be only

one function produced according to Leavell, *Ky. Med. Jour.* (Aug., 1923), when a nerve is stimulated, *viz.*, that for which that nerve was created. The Pacinian corpuscle can never transmit the wave of sound to the auditory nerve, no matter how delicately the harp strings are touched.

The ductless glands can manifest their effects, as stimulators of nerve cell activity, only thru the circulating medium of the blood; hence, a few words regarding the circulation may be *à propos*. Only a very few years ago the medical profession was introduced to the now much used and abused instrument the sphygmomanometer. Of course, we must ever recognize that the greatest functional activity of any structure depends on the amount of blood and its character circulating therein. The fuller and tenser the blood-vessels, the less absorption; hence, an evenly balanced tension means a better and more sustained functional activity of that part so supplied. Here again we have a factor in the ductless glands themselves which may so modify circulation of blood as to influence their own functional activity, as witness high blood tension in exophthalmic goiter. Likewise we see the effect of such high tension in the hyperactive brain cell. As an evenly balanced circulation means normal activity, so an evenly balanced endocrine function means normal brain cell function.

Nature of Reaction to Epinephrin.—

Lyon (*Journal of Pharmacology and Experimental Therapeutics*, May, 1923) maintains that repeated doses of a uniform amount of epinephrin chlorid solution produce the same increase in blood-pressure only if the resting level of the pressure immediately preceding the injection is the same in each case. When the resting levels differ, the blood-pressure responses to uniform doses of epinephrin vary, the magnitude of the disturbance diminishing as the resting level rises. In other words, a much larger dose is required to produce the same effect at a higher level. When the amount of epinephrin administered is increased arithmetically, the resultant blood-pressure rises do not follow suit but bear a logarithmic relationship to the stimulus, obeying the Weber-Fechner Law.



The Trend of Progressive Medicine.—

In the good old days of the conservative fathers of medicine the public had not even the simplest notion of common health problems.

Even the doctor himself knew very little about prevention, and his activities were confined chiefly to "curing the sick" by the treatment of symptoms into the causes of which it was unwise to inquire too closely because inscrutable Providence had ordained that disease and death were just punishment for sin. Hygiene was simply a word without any very great significance, and modern phrases such as "district nursing," "health insurance," "group medicine," etc., were unknown. The public at large was not accustomed to question any medical adviser unduly, and was content to accept a place of ignorance regarding most matters of physiology and therapy, trusting implicitly in the knowledge and skill of the doctor to relieve its ills.

But now there is a wide and deep desire on the part of the public to understand personal health problems and the doctor's attitude toward their solution, and yet the time-honored ethics of the profession still make it impossible to give out information about any disease where a patient is directly concerned, or where a medical man has something to offer in the way of treatment or operation it must first be tested in the crucible of medical opinion. The reasons for this are well founded, and while not obvious at first glance, are doubtless wholly necessary.

Some Disheartening Illusions.—One may say that the progress of medical science has been a succession of disheartening illusions. For instance, someone announces a new discovery, let us say, for cancer. The public takes it up with wild enthusiasm. In

a few short weeks or months the entire matter is thrown to the discard because it has been proven not only worthless but, perhaps, harmful. For this reason medical men are loath to give information to the public until what they have to offer has been tried, weighed in the balance and not found wanting.

The newspapers are always eager to get information on things medical, but they have no immediate interest in sifting out truth from error, their object being *to give the news* and let the future take care of itself.

For this reason we went thru a series of hectic days and nights preceding and following the arrival of Dr. F. F. Friedmann, of Berlin, with his much-vaunted, turtle-serum, tuberculosis cure. About that time some of the newspapers had considered the advisability of having medical men attached to their editorial staffs in order that questions of fact might be passed upon before publication in the daily press. The *New York World*, and the *Herald* especially, employed physicians at one time to investigate so-called "cures" before publication, and to edit the "story" before it was set up. This was in the interest of accuracy and fair play, but the profession was not very helpful in this work and looked somewhat askance at the medical man who would spend even so much as an hour a day in a newspaper office for money consideration. Therefore, some of the papers, the *World* in particular, have discontinued this praiseworthy effort, and it is not being generally taken up by other papers.

Meeting the Need for Publicity.—Recently, however, there have been some signs that the regular profession believes in the efficacy of publicity.

The American Medical Association, for instance, has just launched a new lay medical magazine called *Hygeia*, the first issue of which was published in March, 1923. This magazine aims to bring before the public matters of general medical interest in an instructive and entertaining manner, so that whatever is published shall be readable and, at the same time, accurate. Again, the New York County Medical Society has undertaken the publication of *Medical Week*, which circulates chiefly among its members and keeps them thoroly posted on proposed legislation at Albany, on affairs of the hospitals, the Board of Health, and other matters which directly affect the welfare of the profession. The good of the public is the all-important *desideratum* and, with this in view, the physician of today feels it his privilege to lecture or write on medical matters, provided it can be done in a way which does not savor of personal publicity.

In his Inaugural Address, as president of the Medical Society of the County of New York, Dr. Arthur Freeborn Chace said that we ought to familiarize the public with the achievements of the medical profession. This can be done in a dignified way, and it might even be wise to organize a bureau of publicity or information which could affiliate with other medical societies throughout the State. The object of such a bureau would be to obtain well-written articles by competent physicians on timely topics, to be published in the lay press with the endorsements of local and state medical associations. Dr. Chace went on to say that medical opposition to publicity has worked against physicians in two ways: It has tended to suppress legitimate presentation of medical activities, and has yielded the field of publicity to less scrupulous or irregular practitioners.

This shunning of publicity has been largely responsible for the present day rise of quackery. Dr. Chace says that "if, for instance, physicians had used manual therapy in selected cases, they would not have found their patients leaving them for osteopaths and chiropractors, who claim to cure any and every ailment by manipulation. In Sweden, where the value of manual therapy is recognized, there is no chiropractor problem." This rise of quackery has been very gradual but very

progressive, and has been ignored by the profession up to the present, but in every period of human history there have been many seekers after strange gods, so that the present is only an exaggeration of the past in this respect.

Rise and Spread of Modern Quackery.

—A quack is any person who earns his livelihood by laying claim to special and secret methods of alleviating diseases of the human body without having studied its structure and functions. It is relatively easy to make money by quack methods of exploitation, and that is one of the best reasons for the rise and progress of the many forms of spurious "medicine." Dr. Matthias Nicholl, Jr., in an article in the *New York State Journal of Medicine*, states that the patronage of pure quackery is spreading thruout the country by leaps and bounds. "One state legislature after another," he says, "is yielding to the importunities of quacks and their misguided victims and granting various cults separate boards of licensure and authority to practice on the human body. Therefore, it requires no gift of prophecy to foresee a time when the cultist will be permitted to practice surgery also—in short, granted license to commit murder." Certainly there would be no irregular practice if the public did not demand it; and the public would not demand it if the regular practitioners satisfied their want-gratifying mechanisms.

According to Dr. Lewellys F. Barker, of Johns Hopkins University, "Business men have learned that people's wants can in a large measure be controlled by advertising. Advertising can develop unworthy wants; and poor goods or services that are well advertised may, as everyone knows, supplant to some extent those of better quality that are not advertised." For example, we all know that many people dread the knife. The quack utilizes this psychologic fact by promising to cure them without operation and, in rare instances, he may be able to do this, but in other cases his promise of non-surgical treatment is followed by a fatal issue—for instance, an operation too long delayed. A few years ago a quack eye doctor advertised extensively in the magazines that he could cure cataract without the knife, which is, of

course, quite impossible to the regular profession and was certainly impossible for him. But he gathered in a great deal of money because of his stolid indifference to the results of his fake promises.

Most of humankind, and Americans in particular, are impatient of diagnosis and immediate cure of their ills. It is curious, therefore, how the word "patient" came to be applied to one who is under treatment for an illness, for it is highly inaccurate. Most of us want relief forthwith without taking the time for a careful diagnosis. The quack sensing the psychology of this situation makes a snap diagnosis, takes immediate action, and sometimes wins out, making an apparently brilliant success. He "succeeds where others fail."

To quote Dr. Barker again: "Even cultured patients may be as susceptible to the fraudulent promises of a charlatan as are average doctors to fake investments in oil and mining stocks. Education and training in logic, helpful as they are, do not seem to insure against deception those who strongly desire to find short cuts to either health or wealth."

Nevertheless, not all so-called quackery is unscrupulous or is conducted solely for gain. It is unfair, for instance, to classify Christian Science as quackery, because many members of that cult thoroly believe what they teach, and probably have a great desire to do good aside from the matter of making money from their efforts. The same can sometimes be said of certain osteopaths and chiropractors who, from the regular physician's viewpoint, are laboring under a pall of ignorance and indifference to well-established facts of anatomy and physiology. This, of course, does not make them any the less liable for bad advice to patients, which advice has produced fatalities such as undiagnosed diphtheria, or refusal to allow the administration of antidiphtheritic serum.

Not many years ago no regular practitioner of medicine would think of recognizing, much less consulting, with a homeopath; therefore, homeopaths resented this and dubbed the regulars "allopaths" or other fellows, the point of view being that homeopathy was ideal and allopathy undesirable. But out of this ill feeling there developed a common sense attitude in both camps—that is, the allopaths gave

up the administration of gunshot mixtures of nasty medicines, and the homeopaths to a great degree gave up the use of high dilutions. The follies of homeopathy have been largely forsaken and the narrow-minded bickerings of the "regulars" have certainly become lessened in the crucible of time, because regular medicine is broad enough to cover all that is helpful.

There is some good in almost everything. Even Christian Science, which has been so derided in regular medical circles, is less frequently spoken of, or rather written about, in these days, because it has as its purpose the relief of the sick and afflicted, whatever be the opinion as to how this is best accomplished.

To quote Dr. Mayo: "The great part of Christianity lies in the moral, mental and physical misfortunes of man. I venture to say that people of this generation have not had the comforts of religion received by people of earlier generations. Religion is no longer such a potent force in the sick room; I would not presume to say that too much time has been put on the state to come, but there appears to be a distinct loss of relation to the state of the living. In this field, so sadly neglected by the Protestant churches, Christian Science, while wholly devoid of science, at least brings the comfort of religion to bear on a great number of human misfortunes."

Status of Osteopathy and Chiropractic.

—What is the present status of osteopathy and chiropractic? In many states in the Union these cults, while fundamentally similar, are very much opposed to each other. There do not seem to exist in either of them sufficient facts upon which to base a scientific method of healing. Nobody in his right mind who has even an elementary knowledge of the sciences could believe that all disease is caused by some malposition or displacement of bones due to force. There is so much evidence to the contrary that at first view it would seem to be difficult to start an argument in this matter.

Osteopathy seems to be founded on the principles of so-called Swedish massage. Infantile paralysis was once called "the Scandinavian disease" because of its prevalence in the north countries; therefore, massage for the relief of the permanent deformities became highly developed among trained masseurs.

Certainly there is a wide field of usefulness for mechanical or manipulative therapy, and it is to the shame of the medical profession that it has only recently, since the war, paid sufficient attention to this fact.

Chiropractic seems to have displaced osteopathy in certain regions, perhaps because while every man has a spine, it is behind him and he cannot see what is being done to him, while the patients of the osteopath are often painfully familiar with his manipulations. It is all so delightfully simple that the clerk, teacher or news man can acquire the jargon in a few short weeks—for a consideration.

Whatever good there is in either of these manipulative methods ought to be acquired by the regular profession. There is no need for separate "schools" for the study of what little there is to them.

ETIOLOGY AND DIAGNOSIS

The Prolonged Use of Milk As a Cause of Secondary Anemia in Infancy.—In a recent issue of the *London Lancet* Helen Mackay summarizes her article as follows:

1. There is a general consensus of opinion that too prolonged and too exclusive a milk dietary produces anemia in infants and young children. This is probably due in part at least to iron starvation, on account of the low iron content of milk. Some writers, however, have held that it is directly connected with a toxic effect resulting from excessive milk consumption. Premature infants are known to be particularly liable to this form of anemia.

2. In a group of 36 artificially-fed infants, receiving milk or milk and carbohydrate diets, with or without cod-liver oil, the majority developed anemia. It was usually noted towards the end of the first year of life, but sometimes appeared as early as the seventh month. Additions of vegetables to the diet of six to seven months old infants did not prevent anemia. The infants were in well-lighted and well-ventilated wards, and were much out of doors in summer but very little in winter.

3. Treatment by the administration of inorganic iron salts by mouth brought about improvement in the majority of cases treated, but not in all, possibly because treatment was not continued for a sufficient length of time.

4. No improvement was noted in the

hemoglobin content of the blood in any case within three to four weeks from the beginning of treatment, and improvement might be delayed for six weeks with, thereafter, rapid progress.

5. It is suggested that many cases of anemia in infants, particularly in those artificially fed from an early age, are probably associated with iron starvation, more especially as it has been experimentally demonstrated that the iron retention of an infant on cow's or goat's milk is much lower than on human milk.

Night Sweats in Tuberculosis.—One of the most troublesome symptoms of tuberculosis is sweating at night. This is a fairly constant accompaniment of fever, as Otis states in his valuable paper in the *Boston Medical and Surgical Journal* (Sept. 13, 1923). When the fever disappears, the night sweats disappear, but in themselves they are very enervating and discouraging and call for attention. Besides careful arrangements for open-air sleeping without too much covering, there are various procedures which will aid: A glass of milk with several teaspoonfuls of brandy on retiring, first suggested by Brehmer; bathing the patient with water and vinegar on retiring; observing the time when the sweating begins and waking the patient a little before this time and repeating the milk-and-brandy, or an ounce of whiskey. If the sweating occurs the night clothes should be replaced by dry ones. Of drugs Otis has found two the most useful and with the least harmful effects, namely, agaricin, 1/10 of a grain an hour or two before bedtime, and camphoric acid, 20 to 30 grains.

Diagnosis of Syphilitic Aortic Regurgitation.—For the differential diagnosis of endocardial and arterial aortic insufficiency, Stolkind (*Medical Press*, London, August 10, 1921) says that the following symptoms are of most importance:

1. In syphilitic regurgitation the face is often pale; in endocardial the face is often red.

2. In cases of endocardial insufficiency more than 50 per cent. of the patients are not older than 25-30, while in cases of syphilitic arterial regurgitation the great majority are over 35 years.

3. As regards the average duration of endocardial and arterial regurgitation, it is in all probability longer in the case of the former.

4. For differential diagnosis the anamnesis may often be of use. In endocardial aortic regurgitation the patients generally give a history of rheumatic fever (articular rheumatism), chorea, scarlatina and other infectious diseases, while in arterial insufficiency syphilitic disease may be discovered.

5. A very important sign for the differential diagnosis is the appearance of aortic stenosis, a complication often observed in endocardial aortic insufficiency, and only in exceptional cases in syphilites.



Treatment of Heart Disease.—The treatment of heart disease, McCaskey (*Jour. of the Indiana State Med. Assn.*, April 15, 1923) says, is for the most part the treatment of the patient who owns the heart. This means that all extra-cardiac pathology should receive due attention; and especially that all infections, focal or general, whatever their nature, should be recognized and if possible removed; and that nutrition, metabolism, elimination and general hygiene should be maintained if possible at their optimum standards. Rest and digitalis have been a therapeutic obsession. Both are indispensable in a large proportion of cases. Their indiscriminate use has done much harm. Graduated rest and exercise is the ideal thing. The partially disabled heart muscle can no more reach its highest degree of functional efficiency without the stimulation of appropriate exercise than can the biceps.

The digitalis group stands in a specific relationship to the heart and vasmotor mechanism, and because of this very fact, its use demands the keenest therapeutic discrimination. The routine exhibition of digitalis, just because the patient has heart disease, is utterly reprehensible.

There are two main indications for digitalis, *viz.*, (1) actual myocardial weakness from whatever cause, and especially if associated with rapid heart action and low blood-pressure; and, (2) an ectopic rhythm which has subverted the sino-auricular rhythm by causing so frequent and irregular contractions that the heart muscle is apt to be in the "refractory state" when the normal impulse is delivered, *e. g.*, auricular fibrillation. In the first instance, it has a specific stimulating and strengthening effect on the asthenic myocardium; in the other case, by lowering the conduction time of the abnormal impulses, it renders most of them abortive, and, in whole or in part, places the sino-auricular node in "command." This is probably the most brilliant achievement in the history of cardiac therapeutics.

When digitalis is really indicated, its dosage has been largely misunderstood and has for the most part been much too small. Fifteen to thirty minims or even much more, of the standardized tincture or its equivalent at rather long intervals, say 18 to 24 hours, giving rise to intermittent stimulation, seems to give the best result. In cases requiring long continued medication, it should be given several days and then intermittently for a few days.

Perhaps nothing requires more discriminating clinical judgment than the digitalis medication of the heart. The dosage above indi-

cated may often prove too high and there are certain contraindications, especially to the full dosage above indicated, which cannot here be considered as this paper is already too long.

Chronic Intestinal Indigestion During the Second and Third Years of Childhood.—Hill's (*Boston Med. and Surg. Jour.*, November 30, 1922) practice in feeding is to begin semi-solid food such as oatmeal, farina or zwieback at the eighth or ninth month, with chicken or lamb broth and rice, and apple sauce for constipation. At the end of the first year the child should be taking a quart of whole milk a day, cereal twice a day, soup, orange juice, and apple sauce; and at the fourteenth month, strained vegetables and potato are added. Soft boiled eggs are begun at 16 months, and meat at 2 years.

For practical purposes, chronic intestinal indigestion may be divided into 2 groups—mild cases, and severe cases. The symptoms and signs of the mild cases are failure to gain, poor color, undigested stools, and abdominal discomfort, with underweight, pallor and prominent abdomen. The trouble is usually due to overfeeding with either starch or fat. In starch cases, the stools are large, mushy, brown, and foul or sour, while in fat cases they are smaller, paler and not foul. On microscopic examination of the stools, the slightest amount of undigested starch is abnormal, while there is normally a not inconsiderable amount of fat present. A study of the diet of the child is very important. The treatment consists simply in reducing the amount of the offending element in the diet. In mild fat cases, it is usually sufficient to omit cream, butter and bacon from the diet. In starch cases potato must be withdrawn, and green vegetables restricted. Rice, jelly, crisp toast, or zwieback may be given. The rest of the diet will consist of milk, eggs and meat. In severe cases, the process is of such duration and severity that serious nutritional damage has resulted. There is extreme impairment of nutrition, with large abdomen, haggard face, loose, inelastic skin, frail and weak extremities; and the stools vary, containing undigested starch and cellulose, or fats, often with a large amount of mucus, and a foul smell. Perhaps the best conception of the cause is that it is brought about by a chronic infection of the contents of the intestine, by organisms which should not be there. This bacterial population lives on the food, and the irritating products set up a chronic inflammatory condition in the mucosa, which hinders digestion and absorption. Therapy consists in reducing or entirely eliminating from the diet the foods or food upon which the microorganisms thrive. Protein is well tolerated, a moderate amount of sugar also, but starch, hardly ever. Fat-free milk forms the basis of the diet, 48 or more ounces per day. Sugar may be given in the form of corn syrup; protein is given in meat,

cottage cheese, and casein muffins. The best starch to add is rice jelly or zwieback, and fat is added by giving small amounts of whole milk. Fat-soluble vitamines are given in spinach, egg yolk, or cod-liver oil; and the water-soluble vitamines are contained in the milk given.

It would appear that Hill does not conceive of chronic intestinal indigestion as due to digestive incapacity.

Diagnosis and Treatment of Pulmonary Tuberculosis.—Miller (*New York State Jour. of Med.*, May, 1923), in concluding his review of the high lights in the diagnosis and treatment of pulmonary tuberculosis, emphasizes the fact that the medical profession has been and must continue to be the backbone of the fight against tuberculosis.

The present indications are that we are winning that fight. The death rate from tuberculosis in the United States has been cut in half in the past twenty years and the morbidity from the disease correspondingly diminished.

This is undoubtedly due in large measure to the efficient organization of all classes of the community in which physicians have played the leading rôle.

The outstanding feature of this campaign has been the promulgation of sound public health education. This has resulted in an aroused and enlightened sentiment among the laity concerning this and similar preventable diseases, which insistently demands from physicians better service than has all too frequently been received. Tragedies resulting from medical mistakes or ignorance are still too numerous and will not be condoned by the modern public, educated to a keener perception in these matters.

In the main, it is the general practitioner who must meet this situation. The author believes that a simplification of the essentials involved will aid materially toward that end. We have indicated that these essentials are easily within the grasp of the physician who has made no special study of tuberculosis. Difficult cases there are and always will be, but even in these when a positive diagnosis may not be possible, a strong suspicion of the possible existence of tuberculosis may and should be aroused. It is in such cases that specialists may be of great service.

Miller pleads for a greater interest in the chronic cases, of which tuberculosis is such an outstanding example. In their study and management the details are many and the progress slow, but the joy of achievement is none the less keen and the service to humanity is perhaps even greater than in the more spectacular fields of acute disease and of surgery.

As we look back upon the road that we have come during the past twenty years, it is a cold spirit among us that is not thrilled with pride in the accomplishments of our profession. With the possible conquest of tuberculosis in sight we cannot but press forward toward its realization. Whether the near future is to

bring success or failure depends mainly upon the general practitioner of medicine.

The Treatment of Gout.—William Bain of England after making extensive investigations with the various remedies prescribed in gout, says Walsh in the *Medical Times* (September, 1922), found that: (1) There is an increase in albumin coincident with the development of a sub-acute attack of gout; (2) a preponderance of serum globulin over serum albumin; (3) there are present in the blood the peculiar leucocytes described by Chalmers Watson; (4) lithium benzoate and urotropin were found ineffective as regard uric acid excretion; (5) tartrate of piperazin, lysidin, and sidonal showed an increasing eliminative effect on the uric acid in the urine; (6) the excretion of uric acid was not increased by colchisal, but patients were of the opinion that they derived from its use greater benefit than from any of the other drugs. Modern therapy explains that like hormones, alkaloids, glucocides, synthetics, and many so-called drugs act directly or indirectly thru the blood and lymphatics on the autonomic, sympathetic and parasympathetic nervous mechanism which control the vaso-motor blood supply and therefore the activity of all glands, stimulating or inhibiting the endocrine secretions, inccretions and excretions; it is conceivable, therefore, that with appropriate remedies such as the alkaloid of colchicum (colchicine) we may be able to modify metabolic changes which underlie the pathology of gout and incidentally influence uric acid retention and elimination of nitrogen in the form of urea, uric acid or purines.

Inflammatory swollen joints may be relieved by applications of a saturated solution of magnesium sulphate.

The Treatment of Flat Warts by the Internal Administration of Mercury.—Fox (*Amer. Jour. of Dis. of Child.*, January, 1923) states that the suggestion of treating flat warts by internal administration of mercury was first made by Dr. Charles J. White in 1915. This treatment was tried on the supposition that warts were caused by some as yet undiscovered protozoön. The author's experience has been confined to eleven cases. The result was entirely satisfactory in five cases and in these the disappearance of the eruption was absolutely complete in from three to eight weeks. There had been no return of the disease in these patients at the end of three, four, five and seven months and three years, respectively. The treatment consisted solely of the internal administration of mercurous iodid tablets in doses of one-fourth grain, three times a day. Smaller doses were given the younger patients. No local remedies whatever were employed.

The disease in question is often spoken of as verruca plana juvenilis. It generally appears on the face and hands, and in men is

apt to affect the bearded region. The eruption consists of flat, pinhead sized, or larger, flesh colored, or slightly pinkish yellow, more or less polygonal papules.

Fox says there seems to be no doubt that in a certain proportion of cases of flat warts, successful results can be obtained by such a simple procedure as the administration of mercury by mouth for a few weeks. This method of treatment is comparable to the effects of radiation on common warts (*verruca vulgaris*). At times the results of radium or Roentgen-ray treatment are brilliant, at other times they are entirely unsuccessful. Flat warts can always be removed by the curette, a method, however, which is not an agreeable one, especially for the average child or young woman. It is also well known that various types of warts may suddenly disappear spontaneously. As the mercury treatment is such a simple one, even tho it often fails, it would seem rational to give it a trial before resorting to other less agreeable methods.



Vaccination Is 2,000 Years Old.—"Vaccination is outgrowth of man's effort to protect himself from pestilence by using nature's methods of defense," says Dr. G. W. McCoy, director of the Hygienic Laboratory of the United States Public Health Service. "Primitive man noticed that recovery from a first attack by most diseases gave immunity against other attacks; and, some 2,000 years ago he began to inoculate his fellows with smallpox when conditions seemed propitious instead of waiting for nature to do it at some time when conditions might be very unpropitious."

"Inoculations against smallpox were made in India and in China as early as 300 B. C. Later, when the disease reached Europe, inoculation went with it, supplemented by a new method called 'selling smallpox'—exposing a well person to contact with one ill with the disease so that, if he survived, he would be proof against it.

"Inoculation differs somewhat from vaccination as devised by Jenner, but the principle is the same. Moreover, long before Jenner's day, it was known that an attack of cowpox gave immunity from smallpox; and records show that men who had recovered from cowpox had themselves inoculated with smallpox to make the proof conclusive. Jenner, however, as he himself says, 'placed vaccination on a rock' where he knew it would be immovable.

"Before the days of vaccination, conservative estimates show that one-third of all persons had smallpox and one-tenth of all deaths were

due to it. Today, smallpox is rare. Many physicians have never seen a case; and where vaccination is consistently practiced, no deaths from it occur. Formerly, smallpox was considered a children's disease; and it still is a children's disease—where infantile and school vaccination is neglected. Witness the Philippines, where, four or five years ago, after years of neglect of vaccination, an epidemic swept away nearly 50,000 persons, a large percentage of whom were children under ten years of age.

"In the United States, well-vaccinated communities show low smallpox rates—Maryland with 0.1 case per thousand population; New York with 0.025 per thousand, and the District of Columbia with 0.14 per thousand. Poorly-vaccinated States tell another story; Oregon with 1.45; Washington with 1.72; and Kansas with 2.0 per thousand population.

"Some communities wait till an epidemic breaks out and then rush to vaccinate. This stops the disease—after it has caused many deaths and has 'branded' many survivors. Sixteen months ago, in Kansas City, an epidemic of smallpox began, yielding 350 cases and 123 deaths; and a few months later another started in Denver and yielded 950 cases and 288 deaths. Such epidemics always eradicate the opposition to vaccination in the community—for a time."

Diet in the Treatment of Blood-Pressure.—In our efforts at dieting, says Fontaine (*Southern Med. Jour.*, December, 1922), we should endeavor to have the individual approach the normal weight as set down by these standards at the rate of reduction of one to three pounds a week. Such a diet should not have a total caloric value of more than 1,500. It should have a protein allowance of approximately .8 gram to one kilo of body weight, which is sufficient to maintain nitrogenous equilibrium under ordinary conditions of life. There should also be a reduction in the amount of carbohydrates and fats, with an allowance for the vitamines in the shape of orange or grape-fruit juice, or fresh fruit, butter and some sweet milk.

The following is a suitable diet which I have devised, and have used with success for the past two years:

Breakfast—One orange, or 1 glass of orange juice, or $\frac{1}{2}$ grapefruit with little sugar, or $\frac{1}{2}$ cantaloupe; 1 fried apple or 2 fried bananas; 2 or 3 slices of crisp bacon; 1 slice of buttered toast, or 1 beaten biscuit; very weak tea or coffee, with a tablespoonful of milk and 1 lump of sugar.

Luncheon—Fruit only. One apple, or 2 bananas, or grapes, or 1 orange or $\frac{1}{2}$ grapefruit.

Dinner—One moderate serving of lean meat, or fish; 2 well-cooked vegetables, but no potatoes of either kind; a fruit or a vegetable salad; 1 cornmeal muffin or 1 slice of buttered toast, or 1 beaten biscuit; no desserts except fruit, or 1 thin slice of sponge cake; very

weak tea or coffee with 1 lump of sugar and 1 tablespoonful of milk.

This diet contains approximately 1,500 calories.

High Frequency For Hypertension.—The use of high frequency currents, says Henderson (*Glasgow Med. Jour.*, April, 1923), has been strongly pushed in America, and it is claimed that they have sustained action in lowering pressure without undue cardiac depression. Snow, of New York, has written strongly in their favor, but Ronneaux and Lacquierrière state that such currents have no lasting effects in patients with a persistently high pressure. Some years ago I made an extensive trial of this method without success, tho often the patients felt temporary benefit. Finally, it is important to remember that, even with high pressure, where formerly its use was regarded as contraindicated, digitalis has been tried safely and with benefit in cases where there was danger of cardiac failure. I would strongly emphasize the importance of the early discovery of high blood-pressure, so that suitable steps may be taken to cope with it before secondary changes occur in heart, blood-vessels, or kidneys. Prophylaxis is the best treatment, and in these days of advance in preventive medicine there is here a further opportunity. America certainly has led the way—indeed, has perhaps overshot the mark, as there one of the fashionable diseases is "blood-pressure." There the public are alive to the dangers of increased pressure, and in many cases have regular observations made several times a year, just as they have their teeth looked to at regular intervals. With no desire to appear unduly as an alarmist, one might suggest that it would be a step in the right direction if more people on the shady side of 40 showed the desire to have an occasional over-haul from this point of view.



Beating a "Road Hog."—Passing a slow-running car—or being allowed to pass one—is not easy these days of the road hog, week-end, or so-called "delicatessen" driver.

Showing no courtesy or respect for other drivers or the "rules of the road," he hugs the center when he isn't skidding and running in and out of traffic.

The only way to beat this particular kind of hog when one wants to proceed is to drive up quietly until just behind and to the left a bit; then blow your horn loud and long. Thinking one of his own kind is about to crash thru, he will then nine times out of ten

give you all the room you want, expressing "hog courtesy," the only kind he recognizes.

Reporting the Careless Driver to the Authorities.—An unfortunate state of affairs exists today along any highway or city street. How many times are we, during the course of a "day's run," pushed to the curb or suddenly cut off by a reckless driver, causing mishaps that could easily be avoided by careful driving. And the unfortunate part of it is, that seldom at these times is an officer in view.

The careful driver feels duty bound to report such occurrences, but to whom shall he report? If he does, moreover, he has to suffer inconvenience and loss of time in doing so, besides incurring the enmity of the other fellow. Thus, the careless driver feels fairly safe unless caught by an officer.

This is a wretched state of affairs, all things considered. If the authorities would take complaints turned in, lock up the offender, warn first offenders and after checking up, punish violations of second and third offenders by revoking licenses after the second warning, the roads would soon be clear of this type of driver.

Keeping Down the Cost.—Running costs of the average car today, if the owner or driver is blessed with average intelligence, can be lowered and kept within reasonable limits if interest in one's own car is fairly constant.

Looking over the car daily, or even twice a week, oiling when necessary, applying grease, tightening nuts, bolts and wiring connections, repairing frayed wiring, cleaning out spark plugs, etc., will pay handsome dividends.

Ten or fifteen minutes a day will ordinarily suffice to keep the average car in good running condition. Raising the hood to try out wiring connections, amount of oil registered on oil gauge, loose fan belt, timing chain, etc., taking only a few moments before starting out, will save many anxious moments on the road.

If the foregoing are neglected one all too often finds the case low of oil and the radiator almost dry and to the boiling point on the road. The above conditions are serious, moreover, since they invariably cause more or less permanent injury to valves, valve stems and cylinders and not infrequently prove responsible for burned out bearings.

However, attempting to make repairs and adjustments on the carburetor or ignition system, unless one has more than elementary knowledge of these parts, is sometimes costly and the cause of graver trouble. Specialists in such repairs are handy and efficient nowadays, and charges are nominal at reliable garages.

Suffice it to say, that the driver or owner can by looking the car over periodically and systematically save anywhere from 25 per cent. to 50 per cent. on the running cost of a car,

and incidentally assure that most desirable of features in the use of faithful and satisfactory service.

Do You Know: That dampness and carbon dust will sometimes cause shorting of the distributor, causing loss of function? The inside of the distributor cover may not appear to need cleaning, but occasional cleaning of the cover with a clean cloth, and the contact points with the eraser of a lead pencil will insure much better distribution of the current to the respective plugs?

That a few moments spent in looking over the wiring, connections, gas and oil quantities before starting out on the daily calls pays in dollars and cents?

Recent statistics call attention to the fact that there are 111,000 garages and service stations in the country; but, going still further into figures, proves that there is only one "first-aid station" for every 33 square miles.

That the crankcase should be drained every 500 miles to obtain efficiency, refilling with the best oil obtainable, as this is the cheapest in the long run? There is a great loss of horsepower when "diluted and cheap oils" are used. Remember that good lubrication insures cheap performance and upkeep.

That a little grease on the hood laces, both ends, will do away with squeaks caused by rubbing of the hood and vibration at those points?

That polish with an oil base, or a thin coating of grease, will prevent tarnishing of nickelized or silvered parts of body and head-lights?

That a handful of ordinary washing soda dissolved in a bucket of water and run thru the cooling system will remove rust and sediment?

That the weather has a great deal to do with the finish of your polishing job? A bright, lasting polish needs a clear, sunshiny day.

NEWS NOTES & ANNOUNCEMENTS

Care of Insane War Veterans.—General Hines, director of the U. S. Veterans' Bureau, Washington, D. C., announced, August 29, that insane veterans of the World War now in other than government institutions in and near Chicago will be cared for at Dwight, Maywood and at the Great Lakes Naval Training Station, where facilities will be provided. As a result of the survey of the number and condition of these men, Director Hines has asked the Navy Department to hold the tract at the Great Lakes station which it had proposed to sell. He will request Congress to appropriate sufficient funds

for the repair and upkeep of the buildings. There are now about 6,000 veterans of the World War in contract hospitals. Of the 560 cases of insane ex-service men in Illinois, the less serious cases will be cared for at Dwight.

Radium.—The total supply of radium in the United States, it is reported, is about 100 grams, most of which is owned by physicians. Rich deposits of radium having recently been found in the African Congo, the Radium Company of Colorado has closed its mines and is now an agent for the Congo supply, which, altho richer than the Colorado supply, yields only 1 part of radium to 5,000,000 parts of ore.

Sale of Veronal and Similar Drugs.—The Department of Health, City of New York, has found that fatalities have been caused by veronal, veronal sodium, and several other drugs, and has adopted a section of the Sanitary Code which prohibits the sale at retail of veronal, veronal sodium, luminal, luminal sodium, sulphonal, trional, or tetroonal except upon the written prescription of a licensed physician. Since the adoption of this regulation few, if any, deaths have been traced to the use of these drugs.

Removal of Editorial Office.—Readers of *Medical Week* are informed that, beginning October 1, the new location of its Editorial Office is at No. 67 West Ninety-fourth Street.

New York Gives Insulin to Philadelphia.—It was announced on September 26 that \$10,000 had been given the University of Pennsylvania by Mr. John D. Rockefeller, Jr., for free treatment of indigent diabetics with insulin and for free instruction of physicians in general practice in its use.

Notify Internal Revenue Collector of Removal.—Physicians are reminded that it is necessary under the present law to notify the Collector of Internal Revenue, narcotic division, of any change in office address; neglect of this will subject him to a fine of twenty-five cents for each month passed since removal, and an additional fine, which may make up another three dollars when they next register for prescribing narcotics.

Medical Antinarcotic Agent or Inspector.—Physicians desiring to qualify for either of the above positions should at once address the U. S. Civil Service Commission at the Custom House, Bowling Green, for the necessary application form under notice No. 425. These filled-out forms will be received up to November 6, 1923.

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The Public Health Program of the Future.

In May, 1923, Hermann M. Biggs, looking back over his wide experience of thirty years in public health work, cast his eyes forward to write, "Practical Objectives in Health Work During the Next Twenty Years." A few months after making his address before the National Conference of Social Work, Dr. Biggs went to his eternal reward—a medical statesman, a creative administrator, a socially-minded health officer, whose life had been one of service and inspiration to a city and a state, specifically, but, generally, to mankind throughout the world.

The judgment of Dr. Biggs merits thoughtful consideration, particularly as he indicates that a further reduction in the death rate may reach thirty per cent. in the light of the progress that has been made in the past thirty years in the United States and the gains in longevity that have been made in selected years in England, Australia, and the Scandinavian countries.

One difficulty that is foreseen is the probable lack of a sufficient number of well-trained and qualified physicians and public health workers, properly distributed throughout the country. "Under present conditions in many districts in the United States the number is now totally inadequate, and the ratio of physicians to population is slowly decreasing. The number of physicians who die or retire each year is greater than those who are annually licensed to practice medicine, and this difference will gradually in-

crease, while at the same time the population of the United States is increasing at the rate of about 1,500,000 annually. This increase of population alone requires at least 1,200 more physicians annually to provide properly for its medical care. The deficit in physicians annually, I estimate, is now at least 2,000 or 2,500. We must remember in this connection that one physician twenty years ago could care, after the methods of practice at that time, for at least twice as many sick and well persons as can the physician of today, if he gives these persons the adequate attention which present scientific knowledge and modern methods render desirable and possible. Furthermore, there is no immediate prospect of there being any increase in the number of physicians licensed each year, because the capacity of the medical schools of the country has been practically reached. The tendency each year in the best schools is to decrease the number of students admitted, because the facilities for teaching students are inadequate to care for large numbers. The cost of installing and operating a high-class medical school is now so great that there is little prospect of new schools being added, unless occasionally one may be opened in connection with a State University which does not now have a medical department. In this case the maintenance will come from legislative grants.

"It is true that in many large centers of population there is apparently a surplus of physicians, but this is not because there is

not sufficient work for them to do, but because the work which should be done remains undone, either because the physicians are unqualified or unwilling to do it, or because no compensation for it is available, or because the need for it is not sufficiently appreciated by the people."

What Neglect Means.—In order to present the problem in its most dramatic way, Dr. Rankin, Health Commissioner of North Carolina, is quoted. The phraseology is so apt and so striking that it merits reproduction here: "The health officer sees a field of unsupplied medical needs which is from three to five times as large as that which is supplied. He sees 2,750,000 women confined annually in the United States, and 750,000 or 30 per cent. of them without medical attendance. The health officer sees as a result of the neglect of motherhood a large percentage of the 1,500,000 cases of diarrhea and enteritis which annually affect our 5,000,000 infant population; he sees early childhood with 700,000 cases annually of the common communicable disease; he sees, closely related to impaired and abnormal motherhood and diseases of infancy, the great problem of malnutrition, involving, according to the lowest estimate, 2,000,000, or, according to the highest estimate, 4,000,000 public school children in this country. He sees the common defects of childhood, for which, according to Emerson, malnutrition is 80 per cent. responsible. The common defects involve 1,000,000 public school children who suffer from diseased tonsils and adenoids, 4,000,000 who have visual defects, and 15,000,000 who need dental treatment, all of them retarded and retarding the school machinery of this country.

"The health officer observes 2,000,000 fresh cases of venereal disease occurring

annually in adolescence, added to the tremendous carryover of old cases and complications from previous years. He finds that these diseases and their complications are not receiving one-fifth the treatment they should have."

This, then, represents not the health problem of the future, but the actual health problem of today. Public health work for the future is to be built upon the present, but it requires more definite direction of service than in the past. In all probability specific death rates will be decreased, tho one can scarcely expect continuous and material reductions in the crude death rates. As population tends to reach a stable equilibrium birth rates may continue to fall and crude death rates will eventually tend to rise. Nevertheless, for a considerable period of time, the trends in public health will demand a fixation of objectives, with re-adjustments in the light of new knowledge and methods.

Dr. Biggs, *Health News*, New York State Department of Health, September, 1923, presented a series of objectives, which he deemed most important for the next two decades. They contained a wealth of suggestions, not merely for communal activity and health administration, but as a basis for ordered thinking by those who have not been convinced of the breadth of social medicine. The attack upon the problems of disease definitely encompasses medicine, education, laboratory investigation, law enforcement, publicity, organization, and improvement of medical curricula. Inasmuch as Dr. Biggs' summary takes on the nature of an intellectual and moral legacy, his eleven objectives are presented in his own language:

1. Establishing the custom of obtaining periodic physical examinations of every individual made by competent physicians.

2. Provision of systematic instruction in elementary physiology and hygiene and in health habits in the primary and secondary schools, and more extensive instruction in the normal schools and universities.

3. Further reduction in the death rate from the common infective diseases, such as tuberculosis, diphtheria, typhoid fever, scarlet fever, diarrheal diseases of infancy, etc.

4. Postponement of the age at which death occurs from the cardiovascular diseases and the other diseases of later life, thru physical examination and instruction as to methods for retarding or arresting their progress.

5. Continued efforts, thru research, to solve the problems connected with the causation and prevention of the acute respiratory diseases and cancer.

6. Continued efforts to prevent and cure certain diseases of nutrition and metabolism, such as diabetes, scurvy, rachitis, and gout.

7. The prevention by education and law enforcement of new infections in the venereal diseases, and provision for more adequate treatment of syphilis.

8. The extension of the educational work of the public health authorities as a most effective means to promote the preservation of health and the prevention of disease.

9. Better and more extensive organization of the prenatal, maternity and infant work, and the care of the preschool child.

10. The extension of the work in mental hygiene and oral hygiene, including ample facilities for treatment.

11. The efficient development and extension of medical school inspection, and its follow-up, with the provision of adequate facilities for the treatment of the diseases and defects found in school children.

Brazil, England and Australia demonstrates an international enthusiasm regarding mental hygiene that is most encouraging. In order to crystallize the movement in its growth and development thruout the world, steps are being taken to establish an international committee and to make provision for an international conference on mental hygiene to be held in America during 1925.

A project of this character possesses more value than the mere gathering together of delegates from the various nations of the earth. It possesses a definite central idea of the universality of the underlying principles of mental hygiene. It suggests the necessity for the harmonious interaction of people thruout the world for the promotion of racial welfare, national contentment, and more rational living. It carries with it the idea that the world can be bettered by a getting together of the scientific and intelligent members of different lands, viewing calmly and dispassionately their common problems of mental diseases, mental defects, delinquencies, and social inadequacies. It is another indication of the inherent potentials of organizations working together, with eyes fixed upon man as a worthy end, rather than upon any particular group of men, as determined by geographic, political, economic, or social limits. It is another element indicating the growth of a professional belief in the doctrine of brotherhood, despite many evidences that the world has seen of the failure of this theory to be in the foreground of consciousness during times of trial.

The National Committee for Mental Hygiene has only been in existence for fourteen years, but during this period of time it has demonstrated great wisdom in its progress towards investigating and understanding the methods of hospitals, schools, industries, dispensaries, and homes,

The Mental Hygiene Movement.—The fourteenth annual meeting of the National Committee for Mental Hygiene gave ample testimony to the widespread interest in the objects for which it was organized. The organization of committees in Canada, South Africa, France, Belgium,

insofar as they bear upon the psychoses and neuroses, and the happiness, anxieties, and desolations of human beings. It has worked assiduously upon a program that is fairly comprehensive for dealing with the great mass of mental deficient, who constitute a national liability, not merely in terms of economics, but in terms of social accomplishment and racial advancement.

In the fields of delinquency the National Committee has blazed a new trail. It is experimenting by creating clinics in which are being considered the numerous elements combining as causes of the deficiencies. It is studying carefully and judicially questions of equipment and personnel, standards to be exacted, and possible goals to be attained by social readjustment.

The most significant problem of all is the transfer of attention from the simple plan of hospitalization of those mentally diseased to the larger necessity of attacking mental incapacities from the preventive standpoint. Fortunately, hospitalization is no longer regarded as the sole means of management of those mentally affected. A better grasp of the elements entering into mental disease has made it possible to decrease the time requisite for hospital care and, indeed, has made it possible to keep a considerable number of persons out of institutions thru a rehabilitation under more normal circumstances.

Most significant of all, however, is the gradual change of viewpoint from the consideration of the problems of adults being treated in hospitals to the investigation of children, with a view to enabling them to grow up free from mental handicaps. The brunt of the mental hygiene movement eventually will fall upon those who are dealing with, treating, and caring for children. Knowledge concerning the earliest

evidences of a nervous disorder will be increased. The understanding of the problems abounding during childhood will be heightened. The energies of the National Committee are not misspent, when they are devoted to positive, constructive organized ideas. The mental hygiene program cannot be carried out effectively without the co-operation of the medical profession. Nor, indeed, is the major part of the service to be in the hands of psychiatrists. The bulk of the work for mental hygiene must be performed by the regular family physician and the pediatrician, if the protection of child life becomes the cornerstone in the arch of mental hygiene.

Fortunately, Frankwood E. Williams, Medical Director, and V. V. Anderson, Director of the Division on Mental Delinquency of the National Committee for Mental Hygiene, are keenly alive to the importance of thoroly grounding their program upon experience and scientific study. Their efforts to arouse an interest in mental hygiene among physicians, as well as laymen, have been remarkably successful, considering the brief duration of their services. The greatest impetus to the mental hygiene movement, however, that could be given to assist the cause, would be for each county society to constitute itself the basic center of a committee of mental hygiene and to gather around it strong elements from the community. This would produce a necessary awakening of thought concerning the importance of the subject.

Here again is another tremendously serious medical problem, with a wide range of communal application that challenges the medical profession. The work is going forward, but it remains to be seen whether the leadership thruout the country is to be in the hands of non-medical, far-visioned enthusiasts, or whether physicians and laymen

will equally serve in the effort to redeem the mental potentials of thousands of persons now living and yet unborn. It seems to be beyond argument that physicians should be the natural leaders, organizers and propagandists for mental hygiene thruout the world, and the type of physicians interested should not be limited to psychiatrists.

Mental hygiene is a problem that involves social adjustment, physical handicaps, mental inadequacy, economic disparity, and racial heritage. They surely concern physicians, as, indeed, they encompass all men.

False Doctrine Concerning Glasses.—

"Did you know that all diseases of the eye are curable, without the aid of glasses or operation?" This is a quotation from the advertisement of a book written by a man who has the letters, M. D., after his name. The physician who dares to spread by implication such false and pernicious doctrine violates every canon of decency and reduces himself to the plane of the basest charlatan.

That many persons wear glasses for the relief of trifling imperfections of vision, which do not tend to impair their health or vitality, is well known. They are, however, by means of their lenses, securing more accurate visual impressions than would be possible otherwise. Some people, who have worn glasses for years, secure a natural physiologic correction of their previous difficulties, while approaching middle age. For such the removal of glasses causes no injury.

The panacea method of treating anything is likely to be wrong. The assumption of supernatural powers, or the arrogant belief in the superiority of one's own method, even

the denied and disproven by others, may properly be regarded as an evidence of obsession. The fanatic who states that all diseases of the eye are curable, whether or not adding the words, "without the aid of glasses or operation," is either mentally unsound, profoundly ignorant, lamentably weak in judgment, unmovable by human suffering, or has a perverted greed for money.

The horrible feature of such exploitation of the laity lies in the psychology of people who have an inherent dislike of wearing glasses. They succumb quickly to the printed word that bids them take off their glasses and see. They are glad of an opportunity to embrace a cult that pronounces all ailments of the eye as curable, all functional or organic disorders as amenable to fixation exercises. Those who suffer write no testimonials, and those who had little wrong with their eyes are overwhelmingly grateful for being freed from the wearing of glasses, and in their verbal enthusiasm pour out testimonials, which to a large extent tell of the underlying neuroticism, and not infrequently of their lack of capacity for sane and rational thinking.

To bid myopics discard their glasses is exploitation; to aver that glaucoma is curable by fixation is criminal; to imply that strabismus, or keratitis, or retinitis merely requires exercises of the external and internal muscles of the eye is abominable bosh.

Thru effecting an organization, mainly of laymen, and by establishing as part thereof a publishing company, wide publicity and advertisement have been given to this method, alleged to be based upon research and experiments, which up to the present time have not received, it may be said, the corroboration or the acceptance of the most

conservative, but scientific, ophthalmologists in the world.

There is a meaning the advertiser never intended in the statement that this particular book "has astounded the medical profession."

It would seem as tho the American Association for the Conservation of Vision might properly secure the necessary publicity to counteract the dire effects of a book presenting such a false doctrine. There need be no attack upon individuals, but quite properly an exposure of the untruths, the misstatement, the half truths, and the falsifications, intentional or otherwise, by means of which a well-meaning, but gullible public is being influenced to believe that all diseases of the eye are curable, without the aid of glasses or operation.

The patent medicine man has been attacked as a vicious parasite, feeding on human ailments, but he is a gentleman and a scholar, when one compares his claims with those urged by the central fixationists under the leadership of a physician, who at least in 1922 was in good standing in his own county medical society.



The Eradication of Trachoma.—As an evidence of what may be done in overcoming endemic disease, there is much food for thought in the report by John McMullen, Surgeon of the United States Public Health Service, on "Results for Three Years' Trachoma Campaign Begun in Knott County, Kentucky, in 1913," *Public Health Report*, October 26, 1923.

In the original survey in 1912, 78 per cent. of the persons attacked in twenty-three counties of Kentucky were found to have trachoma. In the mountainous counties of Eastern Kentucky 12½ per cent. were trachomatous. In fact, the disease was so

prevalent and had been in existence for such a long period of time, that the inhabitants accepted it as a matter of course.

In 1913, a trachoma hospital was established at Hindman, the county seat of Knott County. The patients were received and given free care and treatment. The need for its continuance had passed by September, 1916, and the scourge had been practically eradicated. A re-survey in 1923 failed to disclose a single case of trachoma in a casual examination. Many of the previous trachomatous individuals had left their native state, but before so doing their trachoma had been entirely cured, thus preventing the spread of the disease into other non-infected communities.

While in 1913 there were many blind dependents as a result of trachoma, and many of them are still public charges, there has been no increase in the original number. Seven hundred and forty trachoma patients were treated at the trachoma hospital during the years 1913 to 1922, inclusive. While there were only twelve known to be suffering in August, 1923, from the disease in an active form, 63 per cent. were reported as completely cured, and 35 per cent. were doubtful, because their whereabouts were unknown.

Evidence That Points to the Control of Trachoma.—There is ample evidence to indicate that within the ten-year period, and as a result of special efforts covering a period of three years, one of the worst infected trachoma regions in the country practically has been cleared of the disease. Patience and perseverance, with a provision of adequate dispensary and hospital service, under the direction of oculists, trained nurses and other assistants, sufficed to restore to usefulness a considerable proportion of the population. The cure of the in-

fection bearers constituted the main measure of preventive service and the decline of incidence of this unpleasant infection of the eyes spared the growing population from much irritation, with impairment of vision and decrease of earning capacity.

The lesson of this experience bears upon more than the problem of trachoma. It is manifest that the prevalence of such diseases in a community calls for a larger degree of activity than is possible by the efforts of private physicians. An organized, systematic attack, with the cooperation of health officers and physicians, a sufficient use of publicity methods, and a segregated personnel for service constitute prerequisites for sustaining drives against any form of disease which threatens community welfare.

What holds true for wiping out trachoma obtains likewise for many other forms of infection. The campaigns against malaria, hookworm infection and tuberculosis do not vary in general plan, tho naturally they involve a larger degree of effort and an increase of scientific methods, and also require a longer period of time. They all represent, however, types of preventable diseases, which are amenable to scientific measures and which can be reduced to the vanishing point in any community that desires to rid itself of their curse,

Emmett Holt has presented, in the *Journal of the American Medical Association*, October 6, 1923, a valuable article on, "American Pediatrics."

Twenty-five years ago, scarcely a half dozen physicians practiced pediatrics exclusively, and no medical college possessed a separate department for pediatrics. The care of children was a subordinate phase of the teaching of general medicine. There were no laboratories, either clinical, chemical, or pathologic. Antitoxin and the Roentgen rays had been offered the world but three years before and their places in medicine were not established. Milk Stations and Infant Consultation Stations had not been organized. There were no Public Health Nurses. Nor did any state or municipality possess a special department of child hygiene. Pasteurization of milk was unknown.

With such a background of twenty-five years ago one can appreciate the tremendous advances that have emanated from our laboratories and have been interpreted to communities thru health departments, public health nurses, and physicians. The great reduction in infant mortality has been accomplished by our wider knowledge concerning infant diarrhea, diphtheria, rickets, scurvy, and general contagious diseases, not including those of the respiratory tract. The actual reduction of the morbidity and mortality of infancy and childhood has been facilitated by the introduction of antitoxins, vaccines, the pasteurization of milk, more intelligent feeding, improvement of school and home hygiene, and a larger utilization of educational procedures, by private and public health agencies.

Dr. Holt forecasts three distinct types of pediatricians as necessary for the future: "First, the research man, who is likely to be a full-time head of a department in a Uni-

Progress in the Study of Pediatrics.—

The nearness of events frequently interferes with a just appreciation of their effect upon human welfare. The flight of a quarter century enables the critical observer to pass judgments upon the effects of earlier circumstances and conditions. A recognition of the trends growing over a period of time enables one to enter the field of prediction. It is for this reason that Dr. L.

versity Medical School; second, the man who applies our best science in the treatment of sick children in the home, in the hospital, and in the dispensary; and, third, the public health pediatrician, who will organize and direct the special duties in a state, a city, and a county health board." With judicial foresight he recognizes the need for all of these classes of physicians in the future, because the nature of practice during the next twenty-five years will differ very much from that of the past.

The improvements in diagnosis, the advancement of municipal and state plans for preventive medicine, and the marked widening of our scientific knowledge concerning the problems involved in the actual infections and the expansion of our conception of nutrition, indirectly presage the general direction of pediatric practice. No one doubts that the scientific developments will be far more rapid than their general assimilation by the medical and lay population. There is still much to be desired in the way of attaining the results that are possible, even when applying our existing knowledge of infant feeding and hygiene.

The success of pediatric service is not to be measured in terms of a declining death rate, but rather in the improved health and better physical development of the new generation. The increase of service on the preventive side will soon be evident, when periodic physical examinations of children take on an accepted routine character. The gain to the growing generation in health and freedom from suffering will reach its maximum, when physicians broadcast the rules of health so effectively that they will be accepted and practiced by parents. Hence, "Nowhere in the whole realm of preventive medicine is there such a field for usefulness as that which is open to the

pediatrician."

The pediatrician of the future, then, is to become a teacher of health, and his school will be held in the hospital, the clinic, the milk station, the nursery, and the home.

Laboratory workers discover great principles and life-saving facts, altho the major part of their service lies in the unraveling, bit by bit, of mysterious agencies, whose direct influence upon human welfare is not immediately apparent. The clinician is forever testing out the laboratory theories and determining their adaptability for human service. The public health pediatrician combines the results of the laboratory and the clinical tests and interprets them to those who must utilize them, in order to accomplish the maximum communal service.

There is a slight overlapping in the three fields, but the range of service is so great in any one of them that there cannot be said to be a real duplication of effort or a waste of time and energy. What has been said concerning the necessity for three types of pediatricians holds equally true, in all probability, for general medicine. The principles involved in hygiene for childhood are bound up in the rules of living and they apply to all mankind.

Insurance Statistics.—The interest of life insurance companies in public health campaigns is recognizedly financial. There accrues, nevertheless, to the insured a distinct advantage from the decrease of mortality rates thru a readjustment of premium scales, so that more insurance may be carried for a smaller outlay of funds. Both insurers and insured are interested in the national vital bookkeeping. Five of the main insurance companies of the United States have combined in the issuance of a monograph on *The Mortality Experience of*

Industrial Policy Holders, 1916-1920. The data presented, related to a specified group of the population, namely, the wage earners. The statistics of the industrial insurance companies indicate the opportunities for the improvement of life and health conditions among the wage-earning population.

Considering that these five companies in 1920 had an active premium paying membership of industrial policy holders approximating twenty-six million men, women, and children, it is patent that the facts concerning mortality rates are unusually important for health officers and others engaged in studying the struggle for existence, as evidenced in the varying relation among births, morbidity, and deaths.

During the period of five years, 1916-1920, there was a life experience of approximately one hundred and fifteen million years. And, in consequence, the introduction of facts based upon this experience is as detailed and accurate as it is possible to secure from the statistical standpoint for any single group of the population.

Without analyzing the interesting compendium of tabulations, it is satisfactory to note a decreasing death rate of insurance wage earners. The insurance statisticians and actuaries, uniting in compiling and analyzing the statistical material, attribute the health trends to better wage and living conditions during and following the war, the cumulative effects of health work, particularly as directed at improvement of housing and industrial situations, bedside nursing, and the education of policy holders in hygiene, cooperation with health officials in securing health protective measures, coupled with a general policy of all the companies in encouraging and fostering health activity.

It is striking to note that the chief elements of the declining mortality during the

five-year period, excluding 1918, with its unusual peak of influenza, have been the lower death rates for tuberculosis, heart disease, chronic nephritis, and typhoid fever. The ameliorative factors operating for reducing the morbidity and mortality of these diseases involve not merely education and greater interest in the prevention of contagious diseases, but the wider use of sanatoria, convalescent homes, the extension of medical inspection, the increased supervision of water and food supplies, the improvement in industrial hygiene, the extension of dental inspection and tonsillectomies, when necessary, and a growing tendency to take advantage of periodic medical examinations. All of these latter elements that involve persons and occupational hygiene are outside of the jurisdiction and control of insurance companies, but are endorsed by them and in many instances financially fostered, and even subsidized from their resources.

The industrial policy holders represent probably the largest economic group in our population, concerning whom available statistical data are at hand to serve as the basis of definite constructive measures. What obtains for this group, however, probably holds true for all other sections of the population, regardless of its social or economic stratum.

The increasingly general tendency to base palliative health campaigns upon sound statistical data merits the highest commendation. A firm foundation of fact should be a pre-requisite for intelligent health administration. This statistical approach is not limited to the figures for births and mortality, but applies to every field of medical service within the hospital, dispensary, and the laboratory, as well as in the larger field of municipal, state, and national medical affairs.

**MEN
AND
THINGS**

Rheumatic Fever—What Do We Know Regarding This Malady?—If any one fact stands out more definitely than another concerning this ancient malady, it is that we know very little more than we did in the beginning concerning its etiology. The identity of the alleged causal microbe still remains to be unestablished and competent observers still fail to detect it in the blood and serous exudates. It is then most desirable and necessary, that the problem should be explored from every angle, lest obsession as to its infective origin blind us to other factors which ultimately may prove of equal etiologic valency. All the more then do we welcome Dr. Llewellyn's sagacious, original and highly suggestive reflections on this mysterious disease which we take pleasure in presenting in this number. Without intending to boast, or to be fulsome in our praise of Dr. Llewellyn's article, we nevertheless do feel that it is one of the most important contributions to the subject thus far published. It is an article that should be read over and over to get its full value.

Dr. Llewellyn believes in a "rheumatic diathesis" and that its hereditary transference consists in the transmission of a tendency to protein sensitization. "Despise not the day of small things" is evidently his motto, and he would have us note betimes the proclivities of the "rheumatic" child—his proneness to idiosyncratic reactions, and the gradual evolution of the rheumatic syndrome upon and out of an already sensitized soil.

For the direction of their morbid trend is early revealed by their liability to urticarial and eczematous eruptions, asthma, cyclical vomiting, etc.—all significant of protein sensitization; and when those clinical outposts of rheumatic fever appear—torticollis, tonsillitis, erythema, etc.—he asks the pertinent question: May not these also be but clinical variants of the same tendency to protein sensitization? A more hopeful atti-

tude this than the customary warning that the installation of rheumatism in children is insidious—with no recognizable etiologic starting point. For here we have a helpful suggestion—study their food idiosyncrasies—their sensitiveness to particular proteins and identify them if possible by protein skin tests.

Why the heart should be so singled out in childhood has long been a mystery and a reproach. The usual platitudes as to the effect of cold and exposure are scarcely illumining. But there is something eminently reasonable in the suggestion—based on McCarrison's researches—that the depraved cardiac nutrition induced in animals by lack of vitamines A and B may likewise, given the same deprivation, ensue in the heart of a child. If so, it would explain the marked predilection evinced for the cardiac organ by the rheumatic virus, especially prevalent as endocarditis is among the children of the poor.

Also that the changes induced in the intestinal mucosa by a devitamized diet pave the way for the digestive disturbances so common in rheumatic children, and incidentally favor entry into the blood of unaltered proteins and cleavage products with resultant sensitization. Their "sore throats," he believes, are symptomatic—due to a local protein sensitization, which, as a result of their recurrence, may become generalized. Also that the "bilious attacks" they suffer from are of the same nature—due to bacterial or food sensitization.

Prophylaxis of Rheumatism.—He recommends, as prophylactic measures, a well-balanced and vitamin-rich diet combined with abundant sunlight exposure.

On the above basis he holds that the discontinuous elements of "the rheumatic series"—as met with in children—might be interpreted as the outcome of a sequence of anaphylactic poisonings—the necessary supply of minute amounts of antigen being de-

rived from local infective foci (bacterial proteins) or possibly from the diet (food sensitization). Calcium salts he thinks might with advantage be exhibited in that they tend to inhibit the tendency to anaphylactic reaction.

The relatively afebrile course pursued by the cardiac and other lesions in childhood is, he considers, more compatible with an anaphylactic than an infective origin—in that a *fall* in temperature is typical of anaphylaxis, and the reverse—a rise—of infection. He suggests that in cases under observation regular charting of the rectal temperature might, thru its registration of sudden “falls” in the temperature, reveal the unsuspected occurrence of delicate anaphylactic reactions.

A distinctly pertinent suggestion this—in view of our habit of looking only for “rises” in temperature as evidence of a progressive cardiac lesion. As Garrod says, “the formation of successive crops of subcutaneous nodules attended with progressive endocarditis is often accompanied by no elevation of temperature worth speaking of, altho there is every reason to believe that a person who suffers in this way is the victim of an acute rheumatic process.” Again Emanuel, at the recent meeting of the B. M. A., remarking that “rheumatic carditis often ran an afebrile course, emphasized the difficulty of recognizing “active cardial infection.” In the light, therefore, of our very real disabilities in this sphere we would do well to bear in mind the suggestion that a “fall,” not a “rise” may be the true index of active mischief.

Concerning rheumatic fever in adults he holds that the joint swellings and associated erythema are very reminiscent of “serum sickness,” and suggests that like the latter they are of anaphylactic origin. Certainly the joint swellings of rheumatic fever—in virtue of their fleeting duration, their flitting from joint to joint, leaving no trace, seem to be *sui generis*. Wholly unlike all other types of arthritis they may well be, as Llewellyn suggests, the product of some special morbid mechanism, *i. e.*, vascular endothelial poisoning. In like fashion, the insidious afebrile installation of endocarditis and carditis seem incompatible with a frankly inflammatory origin. He suggests that the cardiac lesions are the outcome of minute foci of vascular endothelial poisoning in the cardiac substance, which,

if multiple or recurrent, would lead to local tissue autolyses—the disintegrated elements being ultimately replaced by fibrous tissue. Also, that the victim may be sensitized by protein cleavage products released at these sites—autosensitization—hence perhaps the relapsing character of endocarditis.

Exciting Causes of Rheumatism.—As to the exciting causes, these in children are represented by “sore throats” and so-called “bilious attacks” with possibly in the latter the added factor of acidosis. The acidosis, he thinks, may have some etiologic significance, seeing that a state of acidosis has been found to exist in some cases of rheumatic fever in adults—as judged by the soda-tolerance test and the CO₂ tension of the alveolar air.

But in adults and adolescents another possible source of acidosis has to be envisaged, *viz.*, myogenic acidosis. For the salient exciting cause of rheumatic fever in their instance is muscular exhaustion without exposure to cold.

Basing his contention on Sir Almroth Wright's researches, he believes the above factors engender a state of myogenic acidosis and secondary acidemia—thus recalling the old lactic acid theory, one of the chief objections to which was that the initial storage of lactic acid at the time of chilling or exhaustion was insufficient to account for a disease often of weeks' duration.

But Wright's researches show that tho lactic acid is readily oxidizable, it is only so if the circulation is up to its normal capacity. But apparently in myogenous acidemia it is not, for the primary depression induced by exhaustion or cold is accentuated by the acidemia which further lowers the blood-pressure with increased transudation in the vessels and consequent capillary polyctyhemia.

Obviously a vicious circle is formed, and these various sources of circulatory depression and stasis tend to retard the necessary oxygenation of the asphyxiated muscles, and so the formation of lactic acid is promoted and its removal by oxidization delayed. In light of this it would be interesting to discover whether sarcolactic acid (dextro-rotatory)—like its optical isomer—fermentation lactic acid (levorotatory) can produce endocardial lesions and arthritis as indicated by Richardson's experiments.

Pending further research, Llewellyn sug-

gests that sarcolactic acid may favor sensitization or its generalization when primarily local. If so, the occurrence of widespread tho minute foci of vascular endothelial poisoning would, thru the induced foci of local tissue asphyxia, tend still further to aggravate the state of acidosis. He outlines still further possibilities, but fascinating as these are, space forbids more extended discussion of these masterly reflections which bid fair to open up not only fresh lines of research, but a bright vista of possibilities in the direction of the prophylaxis and treatment of this distressing disease.

Voronoff's Recent Experiments With Gland Grafts.—At the International Congress of Surgery just held in London in the summer of 1923, Dr. Serge Voronoff made a further report on his experiences in the grafting of male and female glands. He illustrated his paper by motion picture films which were discussed in friendly fashion by W. W. Keen, W. J. Mayo, G. W. Crile, and Dr. Albert Kocher of Berne, Switzerland.

Dr. Voronoff said that at the College de France he had obtained durable thyroid and ovarian grafts, also testicular ones, but owing to the difficulty of obtaining human material, he had utilized in several instances the reproducing glands of monkeys "because of their close relation to man." He had performed many experiments for the purpose of determining the best way to make sure that the glands would grow and not shrivel up. Two of his cases date back two years and seven months; one case two years and eight months. In all, the effect of the peculiar internal secretion or hormone was very evident, not only in the subjective sensations described by the patients, but also in certain functional signs which could be tested objectively. Some of these were: Lowered blood-pressure, loss of weight in the obese, better vision in far-sighted patients from improved tone in the lens and muscles of the eye, new growth of hair, and increased power of the body muscles.

One difficulty was to secure a good circulation of blood in the new position of the gland. If this could not be done, the gland became necrotic or dead at the center; therefore it is necessary to use not the

whole gland but only fragments of it, but if the fragments are too small they are rapidly absorbed.

In some of the experiments, the reproductive glands of chimpanzees and other man-like apes were used, six small grafts being taken and inserted into a tissue known as the tunica vaginalis. This was the best location for planting the graft, for it will not grow well beneath the skin or in muscle. Of the six grafts three were planted on each side, but not too close together as contact would cause them to slough off. It was found that this work is most successful in persons who have passed their fiftieth year, but, strangely enough, grafts from young monkeys which had not yet reached the age of puberty failed to take as they did not provide the hormone or secretion mentioned above.

Of Dr. Voronoff's forty-four patients, six were physicians. For three months there was no appreciable effect to be noticed and the physicians scoffed; then, quite suddenly, certain symptoms and signs showed that the grafts had actually taken and were doing the work expected of them. This was substantiated by Dr. Ivor Back of London who asserted that he had watched many of his patients, had talked with them, particularly the physicians, and had, therefore, corroborative information which convinced him of the value of this work. Dr. Kocher said that he had confined his experiments to transplantation of the thyroid. This he had done 214 times with only 14 per cent. failure. About half of the patients had to take thyroid extract by mouth after the operation, as the demand on the new transplants was too large for them to bear, but the quantity required was gradually reduced until the patients took very little or none.

Cooperation of Physicians in Legislation and Education.—There is little doubt that many of our failures as physicians can be ascribed to a highly developed individualistic and competitive spirit. The old joke is always going the rounds concerning the two village doctors who lived opposite each other, and who, altho unable to take care of all the patients demanding their services, refused to speak to each other for twenty years until one went and pulled the other

out of a burning house. The story is supposed to show the absurdity of professional jealousy, but in reality it only proves that human nature is pretty much alike in all of us. In these days the only sensible thing to do is to combine our efforts and our resources in making our influence felt and appreciated.

At the A. M. A. Convention recently held in San Francisco, it was decided to try to organize a workable plan whereby official bodies such as County Societies could advise and, perhaps, even urge the periodical examination of the apparently healthy. This is a wise move. It is right in line with the best efforts in preventive medicine; for the "cure" of disease has always been a hazardous and uncertain undertaking even with all conditions favorable to its consummation. Only a very insignificant part of the entire population of the world has ever received anything like adequate medical care, and it will take a great many decades before we can convince men that the well not the sick are most in need of medical survey. It has been thought eminently proper to let the patient *seek us out*; we should never by word, look or sign intimate that we need the patient. But the hiding of medical light with the intention of emphasizing professional modesty is a mere sham. It is something more than a sham—it is unmoral because it denies the possibility of timely service to some one who is sorely in need of it. If regular medicine or surgery can accomplish anything in the way of preventing or curing disease, then this knowledge needs to be as widespread as possible, because failures are always overemphasized; and, while the good that men do may live after them, it is more likely to be forgotten than the ill they have done.

Says Dr. W. J. Mayo: "The striking feature of the medicine of the immediate future will be the development of medical cooperation in which the state, the community and the physician must play a part *** * the care of the poor and the unfortunate. It is as much the duty of the city as taking care of the streets or the water mains.

"The medical profession can be the greatest factor for good in America. Its real job is the extension of knowledge, of what it is doing and can do in the future thru collective effort."

Dr. Mayo goes on to say that during the war he donned a uniform in the knowledge that our nation was 100 per cent. right, and feeling that we were at least 90 per cent. efficient, but, the war ended, he still feels that we were 100 per cent. right, but that our public efficiency is only about 50 per cent. He thinks that *individually* the American is the most efficient man on earth, but taken *en masse* he is extraordinarily inefficient, particularly as regards public health matters.

We must remind ourselves of the general assumption that the two great sovereign remedies for all public ills are education and legislation. Needless to say, in the last analysis both of these fail to a great extent. Is it not just possible that we already have too much education?

Pick up any magazine or newspaper at random and you will find something about education correcting this or that abuse. Of course, education is a good thing, but it is not for everyone; for the downright hard menial tasks in the world will have to be done in the future as they always have been, by the uneducated. As soon as a boy goes to high school and gets a smattering of "the higher culture," he begins to shrink from work which is laborious and stains his hands. Advertise in the papers for a clerk or a stenographer and one will have an almost endless number of replies. Advertise for a cook or a washerwoman and no replies will be received, not because the latter do not read the papers, but because there are so few people who are willing to do this kind of work.

In America we have been very needful of common labor ever since the restriction of immigration. Restriction was, of course, necessary, but it cannot be gainsaid that it works to a disadvantage.

It is one thing to make a health law and another to enforce it. Every law is at some time broken by somebody. But it is necessary that the most important laws should be strongly upheld by the mass of our population. It seems impossible to enforce some of our laws dealing with public health issues, such as expectorating or smoking in public places. Here, of course, education has accomplished even more than legislation. But our goal is still far away. Of each \$100 spent by our government during 1920, only \$1 went to public health, educa-

tion and legislation—just 1 per cent. for living conditions and national progress! If we are to have education and legislation which amounts to anything, why not begin with those who are responsible for such a sordid condition of affairs?

Use of the Mercury Lamp in the Treatment of Infantile Tetany and Rickets.—

Working at the Johns Hopkins Hospital Drs. Casparis and Kramer are enthusiastic over the use of the mercury vapor quartz lamp in tetanus and rickets. This invention came first from the fertile brain of the late Peter Cooper Hewitt, and has been much used by European physicians during the past two or three years. The efforts of Drs. Casparis and Kramer of Baltimore have been directed toward the study of infantile convulsions and tetanus in small infants. They wished to find out whether the use of the mercury lamp can bring about disappearance of the symptoms, what effect, if any, it has on the calcium content of the blood serum, and whether healing of the commonly associated disease of nutrition, rickets, can be brought about at the same time. After raying with the lamp they have found that the symptoms of tetany, that is, the convulsions, high fever and great pain disappeared in from three to seven days, and that the amount of calcium in the blood serum increased too. They also found to their surprise that the phosphorus in the blood also increases. Thus far their experience is limited to only five cases, all of them children suffering from symptoms of "active infantile tetany," but they are so enthusiastic over the results that they do not hesitate to say that this treatment not only brings about a subsidence of the manifestations of active tetany but also cures the accompanying rickets.

Workmen's Compensation and Health Insurance.—

Two topics have been constantly bandied back and forth in and out of medical societies for the past ten years. One is the question of workmen's compensation; the other that of health insurance.

In New York State, workmen's compensation is now established by law, while health insurance is still *sub judice*.

Undoubtedly the workman who has been injured and rendered less able to earn a living for his family has in the past suffered unjustly. But the workmen's compensation law as now exercised is in some cases an actual economic loss. Take, for instance, a workman who has had a felon on his hand. Under the law he is entitled to all the benefits of full-time disability. He may remain inactive, therefore, for two months, whereas under ordinary circumstances one week would be quite sufficient. Thus he becomes a non-producer for eight weeks instead of one week, and costs somebody a considerable sum of money which must be produced from someone else's labor.

It was believed in Germany where the idea was first tried out that health legislation would reduce the total amount of sickness, and that the death rate would be lowered because of earlier diagnosis and treatment, but as a matter of fact the mortality from important diseases such as tuberculosis, for instance, was not reduced. A fraction of the money spent should have protected the entire population, but even the whole amount did not.

Furthermore, Germany soon found out that health insurance fosters malingering—it seemed so easy by means of a little faking to get something for nothing—and this became so prevalent that it took on the magnitude of a public scandal. In England, likewise, health insurance as a protection to the workman's income has been well demonstrated, but the people who should have been benefited had already received medical aid from the state, and under health insurance were treated by the same doctors who saw them before.

Certainly we should have health insurance for the workman who is ill, but such service should be well supervised and should be given by organized groups of medical practitioners, preferably specialists trained in efficiency.

Health insurance is helpful if wisely administered, but it is not based on sound modern medical doctrine, because it cares for the workingman when ill rather than when well, and he must pay a certain definite amount for the year to cover the cost of illness, instead of paying for the prevention of such illness.

The individual is endangered by the diseases of his associates, and if he would keep

well himself, the whole community must be kept well. Specialists in sanitation who are trained in community work are needed, and such schools are being established where persons with adequate foundational training can qualify for public health work.

The University of Cincinnati has a department of industrial medicine and public health, and Harvard University gives courses which lead to the degree of Doctor of Public Health.

However, capital and labor may struggle for individual and collective supremacy, they should both unite on the advisability of training men to prevent accidents and disease, and to furnish the best possible care for injured employees who can thus be quickly restored to economic usefulness, instead of paying out large sums of money in compensation for loss of services.

Considerable advance has been made in the help which the state furnishes to practicing physicians and, of course, thru them to the public. State laboratories now give the practicing doctor diagnostic aids and reports on pathologic and bacteriologic specimens, a highly specialized form of medical practice which the average physician has neither the time nor the energy to develop. The state also furnishes diphtheria anti-toxins, vaccines for smallpox, typhoid, etc., and this work should be extended, because it is the duty of the state to guard the health of its citizens and to take prompt measures for the prevention of the spread of disease.

Limitations of Specialism.—One may well ask how far the present tendency away from general practice and toward specialism is likely to be carried. Recent arguments have all been in favor of specialism and against general practice. But it is likely that eventually a middle ground will be found upon which the general practitioner and specialist can work in harmony.

There is no doubt but that the specialist, looking at the whole world thru a pin hole, sees only a very small part of it, while the general practitioner, trying to see the world and all that is in it at one glance, is just as likely to get into difficulty.

According to Dr. L. F. Barker of Johns Hopkins University: "General practitioners often assert that they suffer as a result of

the vogue of specialism, and they fear that the competition of private groups and especially of the so-called pay clinics which are semi-charitable institutions, may prove to be detrimental to their interests. They think that general practice is looked upon as the recourse of the mediocre and unambitious or as a sort of purgatory of the abandoned in medicine. They ask, 'Is the general practitioner doomed to disappear or is the drudgery and labor of general practice worth bothering with?' The good general practitioner is needed more now than ever before. It is he who must care for the bulk of patients suffering from acute diseases and chronic disorders."

In a sense the group idea of practice tends to stabilize the two, that is, any patient who is studied by a group in which the general practitioner has his place as well as the specialist, is much more likely to obtain a satisfactory diagnosis. It would seem, therefore, that specialists should combine themselves into groups and become a sort of hydraheaded general practitioner, in which all organs and their functions are thoroly and diligently studied.

But how can the rural districts be thus served?

A Word About the Prevention of Mental and Nervous Disease.—Owing to the great strain of modern life and the so-called high degree of development of civilization, neurotic disorders are becoming more and more common. Many medical men have shown little interest either in psychology or psychiatry, but both of these subjects should be taught to every medical student in order that he may be able to apply his knowledge to the prevention of nervous disorders as well as to their treatment.

The war brought out the fact that there are many mental defectives who are or may become dangerous to the community. How to prevent such a condition, and what to do with such patients is an important public problem. Most people think that suicide is due to poverty. This is not at all true. Suicide is probably a result of overstrained nerves due to bad methods of living. For instance, 12,000 persons committed suicide in the United States during 1922, and of these 679 were millionaires! There seemed to be an increase among the socially promi-

nent and highly educated. There were 38 college students, 58 professors and teachers, 19 religious leaders, 52 judges and lawyers, 84 physicians, and 100 presidents of big business concerns. Many of the causes were most trivial. A girl, for instance, became depressed after bobbing her hair and killed herself. A woman missed two trains and took her life. A designer became tired of life because he was unable to guess the coming spring styles for women. One left a note saying she was taking poison just to get a new thrill! All these show mental imbalance and an improper appreciation of values in life—the inability to see that under other circumstances life could be and would be not only different but happy. This inability to get away from an overclouding accumulation of fears, mostly unfounded, is the chief cause for nervous and mental deterioration, leading to suicide.

The Public Duties of the Educated Physician.—There is a world of satisfaction to be derived from noting the growing recognition by earnest physicians that the public duties of the medical man are not far apart from those of all his fellow citizens except insofar as Kelley, writing in the *Boston Med. & Surg. Jour.* (November 22, 1923), very properly points out the specialized study and knowledge of his profession, together with the experience he has acquired, imposes obligations of service along special lines.

Can any one read the following so beautifully expressed by Kelley without saying, Amen?

Long ago by the Sea of Galilee, the question was asked, "What is truth?" To the answer of that question the foremost, the noblest of mankind have been devoting their lives ever since. As the centuries unfold we think we can see humanity's search becoming more adequately compensated. One thing is clear: From whatever angle such search for truth is begun, as light unfolds it leads man back more clearly to spiritual fellowship with the prophets and the sages, and it must ever be a matter of pride to medicine and its allied professions that light upon the old riddle of the universe, the significance of human existence, shines just

as truly from the life and work of Pasteur, Lister, Nightingale or Gorgas as it does from that of St. Francis d'Assisi, Luther, Wilberforce or Lincoln.

Industrial Medical Practice.—This group work has been taken up with avidity by certain industrial plants, such as the public service companies, telephone, gas, electric light, municipal railways, etc. It has been found that it pays to keep employees in good health; for the annual cost to any corporation in other days, because of minor illnesses, has been enormous. Such a common malady as acute tonsillitis has often kept the worker away from his job for ten days or two weeks. If prompt diagnosis is made by the company's physicians, and early treatment is instituted by the employees' own specialist, this disease is aborted or greatly shortened, and thus a number of working days are saved, to the company, making it possible to increase or to maintain a high level of production and efficiency. Physicians are employed by such companies on salary, and are discovering disease where none was known to exist hitherto.

For many years corporations have cared for their machinery better than for their employees, but now that the mistake has been discovered, strenuous efforts are being made to correct the fault; and, consequently, factory doctors, plant doctors, department store doctors and nurses are to be found in many industrial plants all over the country. This kind of practice is, of course, quite different from family practice where the physician is obliged to call at a house and make several visits because of an acute illness. But it would be obviously unjust to have industrial or factory doctors attend patients outside the confines of the plant itself. In fact, treatment should not be instituted by such industrial physicians except in cases of emergency. Even then first aid only should be given, and the patient should be requested to put himself in the hands of a private physician for such treatment as he requires. By cooperating in this way all parties would be placated and the best interests of the patient conserved at the same time.



REFLECTIONS ON THE NATURE AND ETIOLOGY OF RHEUMATIC FEVER.

By

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That timeworn malady rheumatic fever has long since achieved clinical individuality; but unhappily its true nature and etiologic identity are yet to seek. A chastening reflection but salutary if it engender a more catholic attitude on our part towards this vexed question.

For with the advent of the microbial theory the older views as to its constitutional or "diathetic" origin were somewhat unwise abandoned. But we now begin to realize that this conception contains the kernel of a great and abiding truth, *viz.*, that bacteria are of less importance than the cells and tissues they infest. In short, if the seed—the microbe, be important, the soil—the diathesis—is more so, seeing that it is the latter that determines whether or not the "seed" shall come to fruition, or wither and die.

The conceptions of our forefathers regarding "diatheses" were somewhat premature but have not the recent findings of

biologic research well nigh vindicated their assumptions? This even tho as yet we cannot translate "diatheses" in light of their biochemical equivalents. Albeit, even as the different *genera* and *species* of animals and plants differ not only structurally but *chemically*, so also is there growing presumptive evidence that this same chemical differentiation extends even to *individuals* of the same species.

Is it not obvious that our individual variations in outward form and semblance—differences of color in hair, eyes and complexion—must be the reflection of inward chemical disparities? What other than this too—the ultimate meaning of our endless individual idiosyncrasies—our immunities, and alike our liabilities as individuals, to infective disorders and no less our hereditary predisposition or not to such maladies as rheumatic fever?

The "Rheumatic" Diathesis.—In affirming their belief in a rheumatic diathesis the more judicial minded of the older physicians did but claim that it connoted an innate morbid potentiality—in other words an inborn predisposition to develop, under certain conditions, one or other of the phenomena that make up the clinical syndrome we term "rheumatic" fever.

Obviously the presence of a diathesis does not necessarily imply that all the victims thereof shall react in precisely similar fashion—far from it. Thus we have the

age contrasts between the rheumatism of childhood and adult life; then come in the inborn individual peculiarities which determine why certain rheumatic manifestations shall in some be recessive, in others dominant; why one shows his taint ever and always by arthritis without endocarditis, another as consistently exhibits recurrent erythema or subcutaneous nodules with endocarditis; while yet another will always display nervous symptoms, *e. g.*, chorea.

These variations in clinical expression doubtless hark back to inherited individual differences in susceptibility to the rheumatic virus on the part of the implicated structures and organs. The morbid trend of these children of rheumatic parentage is early displayed and even the most ardent advocates of the infective theory admit that they exhibit different characteristics. Most agree that they are usually fair-haired, of delicate complexion, highly imaginative, excitable and readily fatigued—the neuro-pathic or "hypertonic" child.

Their unstable, nervous equilibrium finds expression in emotional outbursts, night terrors, stammering, muscular tremors, athetotic movements—what Goodhart terms "subchorea." They are prone to lesions of the skin and mucous membranes—fleeting urticarial and erythematous rashes, attacks of epigastric pain with diarrhea. In some, a tendency to cyclical vomiting has been noted, and in others attacks of asthma, alternating with eczema, urticaria or migraine.

Thus Czerny, Paltauf and others, hold that these children of "arthritic" stock are peculiarly liable to a symptom-complex, made up of asthma, cyclical vomiting, vaso-motor ataxia and eosinophilia, the asthma often alternating with skin eruptions, eczema, urticaria, etc.

It would appear then, that *ab initio*, these children are given to idiosyncratic reactions, and display a penchant for disorders that are paroxysmal and periodic, as well as very prone to clinical reaction and alternation. Furthermore, when later they develop definitely "rheumatic" manifestations, these also tend to recur in cycles—phases of relative immunity alternating with phases of hypersensibility, the outward reflection of the incessant combat between the rheumatic virus and the protective mechanisms of the organism.

Reviewing these various proclivities one realizes that the essential attribute of this type of child is in a word—instability. Both in the mental as in the physical sphere, their response to normal stimuli is excessive or abnormal. Their salient characteristic is *hypersensitiveness*.

If now, such a child develop a fleeting tonsillitis, a transient torticollis, or so-called "growing pains," then, and only then does it dawn upon us that he is of a *rheumatic* diathesis—an impression unhappily too sure of confirmation later, when endocarditis, subcutaneous nodules, or perhaps a solitary joint swelling declares itself.

But be it observed that these rheumatic manifestations have developed on a soil already *sensitized*—as betokened by the fruit already borne—in the shape of *asthma*, *urticarial* and *eczematous* eruptions, or some one or other of the toxic idiopathies.

These we now know to be due to *protein sensitization*, and I would ask, is it not highly probable that the disconnected elements of "the rheumatic series" when they appear, are but further clinical variants due to the same underlying cause?

Now most authorities agree that acute rheumatism is distinctly *hereditary*, and not infrequently attacks several members of the same family. What then is the nature of

the morbid potentiality transmitted? In light of my previous remarks, I would submit that the live link in rheumatic, as in asthmatic, heredity consists in the *transmission of a tendency to protein sensitization*.

Herein may lie the explanation of the hitherto inexplicable interplay of the *articular* and *ab-articular* manifestations of acute rheumatism. In other words, that these various disorders, superficially so dissimilar, are but multiple expression of one species of morbid action.

Rheumatic Fever in Childhood and Adult Life.

Again, how sharply differentiated—clinically speaking—is the rheumatism of childhood from that of adult life. In children it finds chief expression in cardiac lesions, erythematous or urticarial eruptions, subcutaneous nodules and chorea. *Arthritic* phenomena in childhood are extremely mild or wholly absent. Articular pain was the chief complaint in only 24 per cent. of 500 cases analyzed by McConnell.

Indeed, the more one reflects on the "rheumatic" manifestations incidental to childhood, the more inevitable the conclusion that rheumatic fever is not primarily a *joint* disorder. The rarity of joint swellings is the more striking in view of the relative frequency with which recurring attacks of *tonsillitis* occur in these children. It seems as if, in their instance, tonsillitis is merely *symptomatic*—yet another manifestation of the "status rheumaticus".

Turning to rheumatic fever in *adults* the clinical picture changes. Arthritic lesions—recessive in childhood—here come to the fore. Conversely the cutaneous eruptions recede into the background. Moreover, when they do appear they are—somewhat unjustifiably, I think—prone to be regarded as complications rather than manifestations of the rheumatic state. Lastly, even the

liability to cardiac lesions—though lamentably marked—is less so than in children, decreasing decade by decade.

That rheumatic fever should, with the passing years, change its clinical *facies* is very interesting. To what may this variation in tissue response or reaction to the rheumatic virus be ascribed?

Studies on *protein sensitization* provide, I think, a clue. Thus, the food idiosyncrasies of early life may later die out, and be replaced by other idiosyncrasies. *Pari passu*, the liability to certain disorders shows a like periodicity.

Thus, the sensitiveness which, in infancy finds expression in eczema may later be transmuted into sensitiveness that reveals itself in asthma. Is it not likewise possible that the sensitiveness which in the rheumatic child betrays itself in cutaneous eruptions, subcutaneous nodules, cardiac lesions, may with the onset of adolescence be transformed into sensitiveness which manifests itself dominantly in joint swellings and cardiac lesions—the sensitiveness in respect of the latter declining decade by decade?

Be this as it may, this clinical variation with the passing years clearly shows that in the ultimate, it is the body cells that dictate the character of the tissue reaction to the rheumatic virus. It is they that mould the clinical picture. In childhood it may be the immaturity of the tissues, in the adolescent the fundamental endocrine changes that mark the coming of puberty.

To resume, I would again suggest that in adults, as in children, the associated *tonsillitis* is merely symptomatic. That it is not necessarily and inevitably a precursor of joint swellings is clear in that in childhood it occurs as an isolated expression of the rheumatic state. Statistically too, how diverse the findings as to the frequency of

its incidence as a forerunner of rheumatic fever!

Pribram met with it in only 2 per cent. of his cases, while others find it in 80 per cent. Clearly the exact relationship is as yet obscure. That it may be merely symptomatic is further indicated by the fact that not seldom attacks of diffuse pharyngitis involving the tonsils have been noted to occur not before, but actually *during* the course of rheumatic fever. Usually, such attacks clear up without exudation, but sometimes culminate in a follicular tonsillitis.

Contrast Between Cardiac and Articular and Other Lesions.—The sharp contrast presented by the *cardiac* as opposed to the articular and other lesions is, I feel sure, fraught with deep etiologic significance. Thus the joint swellings rise and wane leaving no trace. The erythematous and urticarial rashes come and go, the successive crops of subcutaneous nodules also vanish and even that disputed element of the rheumatic series, chorea. On the other hand, the *cardiac* lesions are but too often *fixed, immutable*, if not progressive. Their *im placable character* introduces a discordant element, one out of harmony with the other clinical manifestations of rheumatic fever—the essential attribute of which is *mobility and lack of organic change*. Now, if the several lesions, cardiac and other, are due to a common cause, then why this difference in tissue response? Why do the fibro-serous membranes of the joints recover unscathed, while those of the heart, also a motile organ, suffer such grievous injury?

Is it that the cardiac lesions are chiefly due to *streptococcal* intrusion and that here, as in so many diseases, they play the part of *secondary invaders*? Many think so, but obviously the adjective *secondary*

implies that the impugned streptococci, if in part, are nevertheless *not wholly responsible* for the cardiac lesions.

Perhaps their more malign and progressive characters are attributable thereto, or possibly their implantation is merely of the nature of a *terminal infection*. Assuming that streptococcal invasion, if and when it occurs, is an epiphomenon, there is no doubt that the rheumatic virus, whatever its nature, primarily induces certain morbid changes in the *heart substance*.

As to its nature I would here only submit that the *transient* character of the arthritic and other phenomena distinctly indicate that the *primary* cardiac lesion would likewise, under favorable conditions, remain true to type, *viz.*, be more benign if not transient.

Clinical experience supports the assumption for it is admitted that some cases showing irregularities of rhythm, bruits or even dilatation may apparently recover wholly. In contrast, but too many instances run to their fell end—structural or organic change. Whence this difference in evolution? Hereditary predisposition may account for the immunity from cardiac lesions that some enjoy despite repeated attacks of arthritis. But it does not tell us why when cardiac lesions are initiated, some terminate in resolution, others in permanent cardiac disability, altho this would seem to predicate the existence of *local* controlling influences in the *heart itself*, and the consideration of such possibilities well merits a digression.

Predetermining Factors in Cardiac Lesions.

—The liability to *cardiac* disease is at once the most salient and most lamentable feature of the rheumatism of childhood. It is far more common in the children of the poor than in those more happily situated, and is furthermore peculiar in that the en-

docarditis or carditis tends to manifest itself more often at the close of Winter or in early Spring.

Generally speaking its greater incidence among the poor has been ascribed to their greater liability to cold and exposure but recent researches point to *vitamine-deficiency* as a possible factor. In other words, that in the absence of certain vitamines *structural* changes ensue in the *heart* and that these possibly determine the predilection of the rheumatic virus for the cardiac tissues. This, however, is subject to the fact that not only do individuals vary in their susceptibility to food deficiencies, but so do the different organs of the body and the same organs in different individuals. All these vagaries are quite in keeping with the erratic manner in which "rheumatic" manifestations declare themselves in different families and in different individuals of the same family.

In light of these observations by McCarrison it is of interest to note the *anatomical* changes observed by him in the *hearts* of animals on a *de-vitamized* diet. The chief alterations were atrophy of the heart as a whole, edema of the auriculo-ventricular junction, lack of tone in the cardiac wall with a tendency to dilatation, and in some instances degenerative changes in the cardiac muscle of focal or diffuse distribution.

McCarrison suspects that vitamine A has a specific effect on the nutrition of *cardiac* muscle. Indeed, he holds that vitamines A and B are essential to its nutritional integrity. Moreover—recalling the rheumatic heart of childhood—its greater incidence among the poor and the time of year in which it is most prevalent—he comes to the conclusion that "malnutrition and especially vitamine-deficiency may play a de-

termining part in its production".

That such grave *cardiac* lesions should result from a vitamine-deficient diet is somewhat startling. Albeit, it supplies us with a very reasonable explanation why the heart in childhood should be so singled out by the rheumatic virus.

But if cardiac disease is common in childhood it is not confined to that epoch—for the liability thereto clings obstinately to the adolescent, tho waning with the approach of manhood. Accordingly we must still have regard to this same factor—vitamin-deficiency—for the incidence of cardiac lesions is heaviest during the period of growth—precisely the period during which an ill-balanced or vitamine-deficiency diet exerts its most pernicious effects.

Moreover the fact that certain vitamines are essential to cardiac nutrition is, McCarrison thinks, of pointed significance in the so-called "effort" syndrome—a cardiac disability as he says "not infrequently associated with faulty feeding especially in schoolboys, undergrads, and young soldiers, who indulge in much violent exercise."

Have we not here a plausible explanation why—as records show—"the limitation of the rheumatic affection to heart and joints is more common in boys than girls. But in light of the modern craze for athletics one may well question if this relative immunity of girls will be maintained."

That the *heart* and *joints* should be so singled out seems to predicate some common source of vulnerability. Both are motile organs, both rich in fibro-serous elements, and one is inclined to surmise that—like the heart—the joints also require an adequate supply of vitamines A and B to insure their nutritional integrity. That in adolescents as opposed to children the *joints* as well as the heart are involved may

be in part due to the violent strain so often imposed on them by athletic pursuits from which young children are secure. In conclusion, I would suggest that the depraved cardiac nutrition—induced by an ill-balanced or vitamine-deficient diet—may account for the heavy incidence of cardiac disease in childhood. An organ so liable to grave impairment must be pre-eminently open to any morbid process.

Nature of the Rheumatic Virus.—Bacterial sensitization.

Happily not a few cases of rheumatic fever are *unaccompanied* by cardiac lesions. In their instance the joint swellings and the occasional associated skin eruptions inevitably recall the similar phenomena met with in "serum sickness." May not these manifestations of rheumatic fever be of like origin, *viz.*, the subjects are *hypersensitive* to *proteins*—bacterial and other—and the joint swellings and rashes the outcome of *anaphylactic* reactions?

For even admitting that the clinical evidence in favor of the *infective* theory is undeniably strong—still many competent observers have failed during life to isolate the alleged causal organisms in the blood or serous exudates. Are we then *ipso facto* to reject the infective theory? I think not. But I would suggest that infections, if and when responsible, act thru the medium of *anaphylaxis*.

In other words, that in cases with *local foci* in tonsils or elsewhere the cells of the host gradually become *sensitized* to the bacteria or their proteins resident thereat. As before remarked I incline to the belief that the "rheumatic throat" is *symptomatic*—an evidence of *local protein sensitization*. Vaughan, as we know, holds that ordinary *coryzas* are of this nature. He maintains that "chilling" of the body surface enhances the liability of protein sensitiza-

tion in the naso-pharynx in that it interferes with the normal digestive processes in these cavities and incidentally increases the permeability of the mucous membrane in this area. The sensitization, it is true, may be purely *local* but the so-called rheumatic throat, especially in children, is also often local—an isolated expression of the rheumatic state. Nevertheless, local sensitization may under favorable conditions become generalized.

Sewall's experiments on guinea-pigs demonstrate this possibility of extension. He applied horse serum to their nasal mucous membrane and at first a local protein sensitization ensued. But when the administration was continued or the dose increased the cellular sensitization became generalized. In like fashion, the rheumatic throat is often the prelude to widespread joint swellings and other phenomena.

Upon this basis the discontinuous elements of the "rheumatic series"—as met with in children—might be construed as the outcome of a sequence of anaphylactic poisonings, the multiplying organisms in local foci yielding the necessary supply of minute amounts of antigen. It may be that the bacteria themselves—if they gain entry to the blood-stream—may act as "foreign live proteins" therein. Indeed, Fabre's researches on experimental arthritis lend support to this hypothesis. He injected dead *streptococci* into a joint and nothing happened.

Subsequently, he injected living organism into the *blood* and arthritis developed in the said joint. Presumably the difference in response was due to the fact that the joint was *sensitized* by the first injection. If the joints, then why not the *heart* also? For there seems no reason why it should not be sensitized in like fashion by bacteria or their proteins floating in the blood stream.

While the assumption that rheumatic fever is of *anaphylactic* origin is obviously compatible with the *infective* theory, on the other hand *ipso-facto* this etiologic hypothesis introduces the further possibility, *viz.*, that not only bacterial but *animal* or *vegetable* antigens may be equally potent causes of the disorder.

Food Sensitization.—Especially in "rheumatic" children should we canvass this latter possibility, for the young are more prone to food sensitization than adults. Moreover, "rheumatic" children are given to digestive disturbances and to which in some instances their *urticular* and *erythematous* eruptions have been traced.

Poynton on this point states "Children of rheumatic parentage are liable to attacks of bilious vomiting with white constipated stools and at the commencement of an acute attack vomiting and diarrhea with much mucus in the stools may occur." Again he adds "Between attacks of acute rheumatism mucous colitis may develop, while in adults severe gastric pain with vomiting and diarrhea or attacks of pain along the colon may add greatly to the severity of the disease."¹

The occurrence of such gastric disturbances immediately prior to or during the intervals between acute attacks is to my mind very suggestive of food sensitization. The question then arises, what determines this liability of rheumatic children to gastric disturbances? Heredity doubtless plays a part; but I am inclined to think that as in the cardiac lesions there are other predisposing factors at work in the shape of ill-balanced or vitamine-deficient diets.¹

¹McCarrison believes that *bilious vomiting*, *cyclical acidosis*, *mucous disease*, and other *metabolic disorders* met with in children are very probably due to deficiency of certain "accessory food factors." It is interesting therefore to recall that these same symptom-complexes are by others regarded as indicative of the "rheumatic diathesis".

Indeed, to my mind the diet of a rheumatic child calls for strict scrutiny in these respects. As McCarrison rightly observes: "The maintenance of metabolic harmony is not a question merely of deficiency of vitamines, but of deficiency of any essential requisite of a perfect food. It may be of vitamines, suitable protein, iodine, phosphorus or calcium." The balance too is important inasmuch as deficiency of one essential often means excess of another.

Thus, *e. g.*, excess of starch often means relative deficiency of water-soluble vitamine B—excess of fats, a relative deficiency of iodine with thyroid enlargement, so that lack of balance is well-nigh as important as actual absence of some essential ingredient. Again, lack or deficiency of fat-soluble A or of vitamine B leads to changes in the alimentary mucosa, *viz.*:—*atrophy* *necrosis*, *colitis*. Would not the gradual installation of such lesions pave the way for the *digestive* disturbances so frequent in "rheumatic" children? Would they not furnish precisely the conditions under which entry into the blood of unaltered proteins or cleavage products might occur with subsequent *sensitization* thereto?

We have here, too, a possible clue to the persistent *anemia* so often a prominent characteristic of the rheumatic child, for not only does vitamine A deficiency induce atrophy and necrosis of the intestinal villi, but secondarily (Cramer), a progressive diminution of blood *platelets*, with increasing invasion of the blood by avirulent bacteria.

This passage into the blood of bacteria postulates increased *permeability* of the mucosa—a pre-requisite for *sensitization* possibly not only by bacterial but food antigens. Naturally, it follows too that as a result of diminished absorption of food, nutrition fails and growth ceases. Again, not only

did Cramer repeatedly observe the appearance of anemia in rats on a de-vitamized diet but also that when deprived of water-soluble B, a state of *marasmus with lowered temperature* supervened. Lastly, all these evil effects developed more rapidly in rats kept in darkness than in those exposed to light.

Are not these findings very reminiscent of what we meet with in the "rheumatic" child? Thus, he is usually thin and badly nourished, does not grow and put on weight like normal children of his own age. Again, many of his rheumatic manifestations are *apyrexial* and often he is victimized by persistent progressive *anemia*. It is significant, too, that his rheumatic attacks tend to occur in the Spring—in other words, at the close of Winter during which the child labors under deficient sunlight and an adequate supply of vitamine-rich food is often unobtainable. Having regard to the greater incidence of rheumatism in the children of the poor, is it not highly probable that an imbalanced or vitamine-deficient diet constitutes a salient element in the pathologic ground-work of rheumatism in childhood?

Some authorities, I am aware, feel assured that *dietetic* factors have no etiologic significance in rheumatic fever. If so, then why insist that the most potent cause of *relapses* is the too early resort to meat extracts or broths in place of the orthodox milk diet? May not the explanation be that the subject is sensitized to *meat proteins*?

Conversely, some cases, altho on a rigid milk diet, drag on and on until in sheer despair we resort to meat extracts or broths and the patient forthwith starts to mend. May it not be that in their instance the *milk protein* is the responsible antigen? These questions seem pertinent, seeing that some cases of rheumatic fever are associated with *erythematous* or *urti-*

carial eruptions known to be due to *protein sensitization*.

In light of these proclivities the invoking of *skin-protein* tests seems indicated. They might prove very illumining in cases refractory to a milk diet, also in those in which even an apparently judicious and timely resort to meat extracts persistently provokes *relapses*. Lastly, in children of potentially rheumatic type, exhibiting skin eruptions, recurrent vomiting, etc., they might, if positive, prove *prophylactic*—might prevent further developments, *cardiac* lesions, etc.

The Mechanism of Anaphylaxis.—Dale has shown that one of the basal changes in anaphylaxis is a state of *vascular endothelial poisoning*. Upon this basis the joint swellings and cutaneous eruptions are readily explicable. But are the *cardiac* lesions, when they occur, susceptible of a like explanation?

Now in vascular endothelial poisoning the local arterioles involved undergo vasoconstriction, and the related venules and capillaries vasodilatation. This of course predicates a restricted inflow of arterial blood and stasis in the venules and capillaries.

Now if the blood supply of a muscle is obstructed or diminished, a state of spasm or cramp ensues. Might not minute foci of vascular endothelial poisoning in the cardiac wall explain the "stabbing" pains so often complained of in the initial stages of *endocarditis*? Again tissues whose supply of blood is seriously diminished or cut off tend to undergo *autolysis* and the disintegrated elements are replaced by fibrous tissues. May not the fibroses left after severe and recurring myocarditis be thus explained?

Now the fibroses in myocarditis are usually discrete and remote from one another, but they may be diffuse and are gen-

erally located in the neighborhood of an arteriole whose lumen may be blocked or narrowed by thrombi.

Assuming the presence of foci of vascular endothelial poisoning the symptoms will naturally vary with the site of the circulatory stasis. If it involve the blood supply of the primitive tissues—the *node* or *bundle*—irregularities of rhythm would ensue. In the same way minute vascular stases if widely diffused thru the myocardium would lower the nutrition and tone of the cardiac wall with resulting dilatation; or if, as is more common, located in and around the bases of the valves would ultimately lead to their distortion and inefficiency.

Going more into detail such states of local stasis and asphyxia—even tho but fleeting, must, if multiple or recurrent, lead to the retention of muscular catabolites, *e. g.*, lactic acid and a state of *local myogenic acidosis* ensue.¹

Moreover, a reduced blood supply entails increased H-ion concentration which markedly facilitates *tissue autolysis*. Fortunately serum—partly thru its buffer function which curbs the development of acidity—tends to inhibit autolysis and so with the restoration of a free circulation the morbid process ceases. Doubtless in favorable instances the changes induced are ephemeral as likewise the cardiac symptoms occasioned thereby.

On the other hand, given the occurrence of such states of vascular stasis or occlusion in a heart the nutrition of which may

¹Ivy Mackenzie, discussing rheumatic fever, observes: "Many of the phenomena suggest the presence of toxic agencies without the immediate presence of microbes. This applies more particularly to endocarditis, and the situation and character of the muscular and fibromuscular lesions are not incompatible with a process of perverted metabolism of the muscle substance."

already be impaired (thru an ill-balanced or vitamin-deficient diet), the consequences may well be more serious. For presumably under such depraved conditions a reduced blood supply would more readily lead to *tissue autolysis*, which morbid change moreover ensues much more rapidly in *cardiac* and *unstriated* than in striated muscles.

Longcope, indeed, found that *structural* changes ensue in the *heart* following repeated anaphylactic intoxications, and incidentally Weil and Schultz hold that the cellular reaction in anaphylaxis takes place chiefly in the non-striated muscles.

As to the disintegration products of tissue autolysis, there is much evidence that they may engender conditions interpreted as anaphylactic shock, and experimental work suggests that it is especially the slightly altered proteins that are responsible.

Auto-sensitization.—In as much as we are dealing with the heart, it is well to recall the existence of *organ-specificity*, the detection of which opens up the possibility of auto-sensitization. It is known that an animal may be sensitized by its own *lens protein* and it is believed that a mother may be "sensitized by the autolytic products of her own placenta." If so, given minute foci of autolysis in the cardiac substance, is it not conceivable that the victim may be sensitized by the protein cleavage products released at these sites, *i. e.*, auto-sensitization? Here possibly we may find a clue to the source of "relapsing" endocarditis, *viz.*, alternating phases of sensitization and desensitization.

Anaphylaxis in Relation to Temperature.—Considering how readily the body temperature in children rises, how is it that their "rheumatic" manifestations are so often *apryrexial*? Thus, both *carditis* and *endocarditis* are frequently from beginning to end *afebrile*—a feature more compatible

with an *anaphylactic* than an infective origin.

So constantly in anaphylaxis does the rectal temperature drop several degrees that many regard it as a criterion of the condition. Zinnser indeed holds that close observation in this respect may be of much value in determining "mild reactions when other symptoms of shock are not strongly marked." Pfeiffer indeed goes further, claiming that by this criterion alone "delicate anaphylactic reactions may be determined when all other symptoms are lacking."

Now *endocarditis* and *carditis* being so often *afebrile*, we are naturally apt to have regard only to a *rise* in temperature as an indication of active mischief. But if, as I suggest, the cardiac lesions are of anaphylactic origin—the reverse—a *fall* in temperature may be the warning signal.

To this end I would, as an adjunct, suggest that in cases under observation, regular charting of the *rectal* temperature might aid us in determining that oft-recurring anxious point—is the cardiac lesion stationary or still active and progressive?—with its obvious bearing for or against continued re-cumbency. It might throw light, too, on the etiology of those cases in children in whom a progressive *anemia* is the first symptom to attract attention, *viz.*, the possibility that it may be due to a series of mild anaphylactic poisonings.

Reverting to rheumatic fever in adults the temperature—if we except that rarity, *hyperpyrexia*—is of moderate grade. The older contention that the pyrexia in rheumatic fever was a *primary* phenomenon seems to have died out, the general opinion being that the fever is of *secondary* origin.

In other words, that it is linked up with and dependent on the *local* lesions, espe-

cially the *articular*. Now in children, as remarked, the temperature is much lower than in adults and pyrexia often wholly absent, and it is significant that in their instance joint symptoms are often trivial or lacking. In contrast, in adults, articular lesions are dominant and in their presence fever is always present. Moreover, if salicylates be exhibited both the joint swellings and the temperature disappear—a further strong argument in favor of the *secondary* origin of the pyrexia.

Sir Archibald Garrod on this point observes:

"Unquestionably the local lesions have a very great power of modifying the temperature curve, but they do not all possess this power in an equal degree; and whereas pericarditis causes a well-marked rise of temperature, and severe arthritis is always attended with fever, endocarditis has very little effect upon the curve."

The differential effect—*qua temperature*—of these various lesions is definitely in favor of the *secondary* origin of the pyrexia in rheumatic fever. In other words, that the pyrexia is, so to speak, an *epiphemonon*, not primarily referable to the causal rheumatic virus whatever its nature, but due to and arising out of the local lesion initiated by the said virus.

Albeit, this still leaves unanswered the interesting questions, why is it that the incidence of endocarditis or carditis occasions little or no disturbance of the temperature, while *pericardial* and *articular* lesions cause such a definite rise? It would seem to predicate some local and specific difference in the pathologic or biochemical reaction of these particular structures to the causal virus. But here—pending further research—speculation must cease.

Nevertheless, I would submit that if we grant that the pyrexia in rheumatic fever

is *secondary* or *local* in origin, then it follows that the contrast, *qua temperature*, between the rheumatism of childhood and that of adult life is vastly minimized, and, incidentally, their approximation to each other in this respect strengthens my belief in the anaphylactic origin of the disorder.

Seasonal Incidence.—Both here and in the United States rheumatic fever tends to appear in the Spring, and we may well ask, why this periodicity? The answer is assuredly bound up with that mysterious inherent tendency of all living creatures to be *rhythmic*, their internal physiologic rhythms tending to synchronize with external or cosmic periodicities.

How profound the influence of Spring upon the organism! Growth is stimulated and how fundamental the impulses this connotes! Chemical changes ensue in the blood and in the endocrine glands, notably the thyroid, and all are the outcome of activating influences derived in large part from the solar radiations.

Thus Hess and Unger noted that in infants, on a constant diet, the *inorganic phosphate* content of the blood falls during the Winter, to reach its lowest point in the Spring. But from thence onward the phosphates rise month by month in strict accord with the actinic intensity of the sun's rays. *Pari passu* the curve incidence of fresh cases of *rickets* waxes and wanes.

The same is true of the blood *calcium*, which sinks to its lowest level in May, but from then on accumulates thru the Summer months, while coincidentally the curve incidence of cases of *tetany* rises and falls. Again Reid Hunt noted that in certain mammals the *iodine* content of thyroid—at its lowest ebb in May—increases from then on to the late Autumn, and at its zenith

is three times as high as in Winter and early Spring.¹

Apparently then the seasonal incidence of *tetany* in the Spring coincides with the low level of the blood calcium and of the thyroid iodine.

Now Goodhart noted that "rheumatic" children were prone to *tetany*—a disorder moreover sometimes accompanied by *joint swellings*. True these latter simply connote a little *edema* over one or two joints, but for the most part this is precisely what *articular* rheumatism in children amounts to—a slight puffiness, easily overlooked, of wrist, ankle or knee.

Recalling the ingrained tendency of rheumatic children to divers forms of *muscular incoordination* and spasm, this overlapping of the two disorders is not surprising. But is not this trenching of the one upon the clinical territory of the other suggestive of some deep etiologic nexus? May not the seasonal lowering of the blood content of *calcium*, if not also of the thyroid *iodine*, have some etiologic significance in rheumatism as in tetany?

Seeing too that these same changes are in large part due to the *solar radiations* why not, as in rickets, enlist the aid of sunlight or ultra-violet rays in the treatment of "rheumatic" children? For not only does sunlight retard the onset of the evils attributable to vitamine-deficiency, but it also mitigates their severity and may haply even obviate their installation. Furthermore,

¹Apparently, too, the bactericidal power of the blood undergoes seasonal variation; thus in louping-ill—a disease which attacks sheep in the spring, Hamilton noted that the blood at this period forms an excellent culture medium for the causal bacillus. But at other seasons it is not only inimical to its growth, but intensely bacteriolytic thereto. Reid Hunt also found that guinea-pigs were far more resistant to the toxic effects of acetonitrile in summer than in winter months.

thru its power of increasing the blood *calcium* sunlight diminishes the tendency to *nerve irritability*—so prominent a feature in rheumatic children. Moreover, the rise in blood calcium may have a *prophylactic* effect in that calcium salts tend to inhibit anaphylactic reactions.

Exciting Causes.—What are the determining causes of rheumatism in childhood?—a question we may well ask in view of the scanty information vouchsafed us even in text book devoted to children's diseases. In lieu thereof the insidious subterranean fashion of its installation is continually impressed upon us, leaving the somewhat hopeless feeling that in children there is, etiologically speaking, no recognizable starting point for the disorder.

Nor can it be denied that the occult and often afebrile evolution of endocarditis and carditis lends color to this assumption. Moreover, the "sore throats" they suffer from so often appear as an isolated phenomenon and are so rarely followed by joint swellings that we are apt to overlook the more evil contingency—their possible relationship to cardiac lesions—as yet unavowed.

Especially is this to be expected if my contention be true, *viz.*, that the throat lesion is an evidence of *local protein sensitization*. For with its tendency to recurrence the possibility that the *heart* may be sensitized is only too likely. This once achieved, a second entry of the responsible antigen into the blood-stream would occasion a local cellular reaction in the heart substance, and so—by the mechanism previously suggested—the cardiac lesion is initiated.

Another possible and, as I believe, insufficiently realized determinant of rheumatic outbreaks resides in the marked liability of these children to recurring "biliary attacks"—vomiting with white stools, of-

fensive breath, and a change in complexion. Some authorities maintain that rheumatic children are prone to *cyclical vomiting*, and for myself I believe with Langdon Brown that so-called "biliary" attacks are identical therewith.

In view of its possible relationship to acute rheumatism, it is interesting to note the growing tendency to regard cyclical vomiting as due to *protein sensitization*. But apart from this we have also to recall that such biliary vomiting is frequently associated with *acidosis*; and moreover, may in a child merge without break into acute rheumatism. This being so, it is well to note that recently, as shown by modern methods, a state of *acidosis* has been found to exist in some cases of *rheumatic fever*. Thus, Sellards in his studies of acidosis in various diseases—noted—as judged by the soda-tolerance test, that a significant degree of acidosis obtained in "acute rheumatic fever."¹

Again, Frothingham and Walker studying eight cases of "acute articular rheumatism" found that—as indicated by the CO₂ tension of the alveolar air—several showed evidences of acidosis and four of them an increased soda-tolerance. In one acetone was present and in another the ammonia was elevated to 10 per cent.

This fact that a state of acidosis sometimes exists in rheumatic fever may be of etiologic significance. The more so in that

¹"The milder grades of acidosis may develop and persist for a short time in a variety of conditions tho there is apparently a tendency both among clinical and laboratory workers to exaggerate the ease with which slight acidosis may occur. Thus, in the wards of an ordinary general clinic, one would not expect to find cases with an increase in soda-tolerance to even twenty or thirty grams, except in certain fairly well-recognized conditions. One should mention, more especially, *acute rheumatic fever*, advanced cachexias and severe anemias." (The italics are mine.) Sellards' "Principles of Acidosis," page 51.

the tendency to recurrent vomiting has been noted not only in definitely rheumatic children but also in the offspring of rheumatic parents and this prior to their development of actual rheumatic manifestations.

This, of course, raises the question as to whether oft-recurring states of acidosis—in conjunction with other factors—may not predispose to the development of rheumatism in childhood. Be this as it may, I would submit that clinical experience indicates that in children the most prominent *exciting or determining causes* of acute attacks of rheumatism are *alimentary disturbances*.

In contrast, when we turn to rheumatic fever in adolescents or adults, *cold and damp* with oftentimes an added factor—*muscular over-exertion*—loom large as exciting causes. But meanwhile with the passing of puberty the disease itself in like fashion has altered. Its onset is more fulminant, joint swellings are dominant and profuse acid sweats appear while the disease is more definitely febrile, shorter lived and more acute. One may hazard the suggestion that these contrasts hark back to differences in the intermediary pathology of rheumatic fever in adolescents as opposed to children. In other words, that the clinical syndrome we term rheumatic fever may be arrived at by a variety of routes.

But while exposure to cold or damp is the traditional exciting cause, I have, like others, met with the disorder when precisely the reverse conditions obtained, *viz.*,—heat, sunshine and dryness.

Indeed, on this vexed point Poulton's statement as to the position is to my mind most apposite. Thus he observes: "Cold and damp have generally been regarded as exciting causes but analysis of large numbers of cases and their relations to temperature and season show that the disease is frequent

in proportion to high temperature, hours of sunshine, and to a certain extent to humidity and east winds, but that it is actually less in times of much rainfall".

While at first sight this pronouncement would appear to rule out cold and damp it is obvious that "chilling" of the body surface may and does quite commonly occur under the climatic conditions cited. In my experience the combination, not uncommon in Spring, of bright sunshine with an east wind and dryness is very provocative of rheumatic fever.

Growing lads and youths at this season are naturally prone to violent muscular exercises. Unhappily, prone also when exhausted to loll about, forgetful of the east wind playing on their scantily attired and freely perspiring bodies. Again in other instances rheumatic fever follows excessive or too prolonged sea-bathing. Swimming is notoriously exhausting and when combined with overlong immersion a chill is easily contracted. That the subjects should within a day or two, or even sooner, develop rheumatic fever is not surprising, but what of the *modus operandi* of these factors?

The Action of Over-fatigue and Cold.—Sir Almroth Wright has remarked that we interpret the term "Shock" in too narrow a sense. Whereas, instead of restricting the term to *surgical* shock every dangerous collapse should be designated as shock; and we should speak of shock from excessive muscular effort, shock from exposure to cold, etc.

Now these are precisely the conditions that the history of the onset of these cases of rheumatic fever so often reveals *viz.*, *over-fatigue* supplemented by *exposure to cold*.

Consider the victim—often a growing lad at school. His diet may at first sight appear

ample but closer scrutiny shows that it is ill-balanced with a consequent relative deficiency of vitamines. Bearing in mind the possible effect of such deficiency on *cardiac nutrition*, is not such a lad *ipso facto* more likely than his fellows to arrive speedily at a state of muscular exhaustion?

Muscular Acidosis, and Acidemia.¹—Now what does shock from excessive muscular effort portend? In a word, *muscular acidosis*. This, because the supply of oxygen to muscles in violent and continued exercise tends to fall short of their requirements. Furthermore this state of deficient

¹Discussing myogenous, muscle-asphyxia, or shock acidemia, Sir Almroth Wright remarks that it is the commonest form of acidemia—based upon the primordial physiologic fact that muscle when stinted of oxygen elaborates lactic acid. This fact he holds of fundamental pathologic importance. His experiments on rabbits show:

(I) That when main arteries supplying muscles are ligatured—and the application of a tourniquet or Esmarch's bandage is, of course, an equivalent to this—acid is produced in the exemic limb; and with the opening up of the circulation there supervenes profound acidemia.

(II) That immersion in ice-cold water produces the same effect with the difference that here, because the circulation is still to a limited extent maintained, myogenous acidemia comes on immediately. When, after the ice-bath resuscitation procedures are resorted to, the acidemia may be aggravated. For with the reopening of the circulation additional acid from the muscles will make its way into the blood.

(III) That violent and long-continued tetanization of muscles produces—no doubt because the supply of oxygen here falls short of their requirements—formidable acidemia.

We also brought out the following points:

(IV) Any and every collapse of the blood-pressure must produce precisely the same effects as the mechanical shutting off of the blood-stream. In other words, whenever, as the result of muscular exhaustion, exposure to cold, prolonged anesthesia, nervous shock, hemorrhage, or bacterial intoxication, the heart gives out, then the circulation in limbs and body surfaces will become inefficient, the muscles will become asphyctic, and a myogenous acidemia will supervene.

(V) Exposure of the extremities to continuous cold and wet—such exposure in the war led to the development of "trench-foot"—will inevitably lead to the development of a focus of muscular acidosis and, it may be presumed, also to some consequent acidemia.

oxidation will be more speedily attained if, during the stage of exhaustion, a cold east wind plays upon the freely perspiring body, for chilling of the body surface thru evaporation quickly ensues. The resultant lowering of the temperature lowers the dissociation curve of hemoglobin for oxygen; hence diminution of the oxidation processes, which tends to increase if the tone of the cardiac musculature is also below par.

The muscular *acidosis* that results is due to the fact that muscles inadequately supplied with oxygen elaborate *lactic acid*. Moreover, when exhaustion gives way to re-action the revived circulation washes the lactic acid into the blood-stream and a *myogenous acidemia* results.

Ryffel indeed has shown that after strenuous muscular exercise lactic acid appears in the urine. It leaks thru because the oxygen in the blood is insufficient to oxidize the whole of the lactic acid formed by the strongly contrasting muscles before part of it is washed out by the blood-stream.

This fact that *muscular over-exertion* (generally with exposure to cold but sometimes without) is the salient determinant of rheumatic fever has not as I think been sufficiently emphasized, in view of its possible relation to the subsequent incidence of *cardiac lesions*. Nor is it I think adequately realized that the *primary symptoms* in rheumatic fever are frequently located in the *muscles*. Like others, I have seen an acute torticollis merge without break into rheumatic fever with endocarditis. Apart from this the muscles are frequently the seat of severe pain, tenderness and even swelling, and this *prior* to the advent of joint swellings.

Now in light of the foregoing experimental researches on *myogenous acidemia* it would seem justifiable to assume that in cases of rheumatic fever *having the above*

origin, a state of *muscular acidosis* with sequential *acidemia* obtains; this at any rate prior to its onset if not indeed subsequently thereto. This the more probably in that, under such circumstances, the disorder generally speaking declares itself speedily, *viz.*, within a few hours or in from one to two days.

Clinically speaking the symptoms of myogenous acidemia may be slight and easily overlooked, as air hunger may be absent—the victim merely exhibiting a sallow or earthy color with some shortage of breath on movement.

That lactic acid is readily oxidized under favorable conditions and thus quickly disposed of is true, and for that reason the degree of acidemia is never so extreme as in other types of acidemia.

But quick disposal of lactic acid is only attainable if the circulation be adequately maintained, and Sir Almroth Wright has shown that in myogenous acidemia it is often inadequate to its task—for the initial depression of the circulation thru muscular exhaustion is increased by the acidemia which further lowers the blood-pressure. This, moreover, again is aggravated by the incidental *augmented transudation* from the blood-vessels with consequent *capillary polycythemia*.

In short a vicious circle is thus produced, for the lowered blood-pressure and the obstruction of the capillaries by corpuscles tend to prevent the oxygenation of the muscles which of course aggravates their asphyxial condition with further production of lactic acid and consequent acidosis and acidemia.¹

¹ A further disability that makes for prolongation of the acidemic state resides in the fact that in myogenic acidosis the acidemia is *secondary*—as opposed to ingestion, diabetic and retention acidosis in which the acidemia is *primary*. The consequence is that while in the latter the administration of alkalies is an effi-

In light of these sources of delayed oxidation one of the main objections to the old *lactic acid theory* of the causation of rheumatic fever seems minimized, *viz.*: that the primary accumulation of lactic acid in the system at the time of “chilling” would not account for the maintenance of a disorder often of some weeks duration. That if it was to be regarded as the cause of the disease the lactic acid must be continuously elaborated thruout its course.

Richardson (1853) as we know did produce endocarditis and a migratory arthritis in dogs after injecting lactic acid into their peritoneal cavities. Clinically too, Sir Walter Foster (1871) noted in two cases of diabetes that the administration of lactic acid was followed by an arthritis resembling that of rheumatic fever. It cleared up with its discontinuance, but when resumed after an interval the arthritis recurred—a sequence observed on no less than six occasions. But as it happens the lactic acid used was *levo-rotary*, the product of fermentation, whereas its optical isomer *sarcolactic acid* is *dextro-rotary*—in short the two varieties are not chemically identical. That the former, if injected or ingested, can produce an arthritis, seems certain; but so far as I can ascertain, no experimental investigations of sarcolactic acid from this standpoint have been undertaken.

Pending establishment or refutation of similar pathogenic capacities on the part of *sarcolactic acid* we must rest on the assurance that muscular exhaustion plus exposure to cold induces muscular acidosis and acid-

cient antidote—in the former it is not so satisfactory. For, as Sir Almroth Wright states, “When the acidemia is corrected there will remain over the histo-acidosis” (the accumulation of acid products and diminished alkalinity in the tissues). In short, if we cannot, as he says, at the same time remove the latter, the condition of acidemia will again return when the circulation washes a further quantum of lactic acid into the blood-stream.

emia and that these conditions probably obtain in rheumatic fever. It may be that these of themselves may be adequate to produce the disorder, or it may be that they are only *contributory* factors.

If the latter, how do they act? Sherwood studying various substances in excess in the blood during pathologic conditions, *e. g.*, CO₂, lactic acid, acetone, etc., found that they had a tendency to *inactivate the complement*. Complement being the substance that destroys bacteria, the inference appears to be that the presence of lactic acid in the blood favors infection or interferes with recovery from infection. Incidentally, several observers have noted that lactic acid is *negatively chemotactic*.

Sir Almroth Wright found that the *gas bacillus* injected into the veins of a healthy individual has no effect. But if the alkali of the blood is neutralized by carbonic or lactic acids or a *general or regional muscular acidosis* is present, then the bacillus, if injected, immediately produces gas gangrene. Apparently the neutralization of the alkali of the blood by lactic acid provides precisely the medium favorable to its growth.

It seems reasonably certain then that a state of muscular acidosis and acidemia favors the occurrence of *infection*. For myself I believe that infections—if and when responsible for rheumatic fever—act thru the medium of *anaphylaxis*. (One may note too that the vascular endothelial poisoning thru which anaphylaxis manifests itself also tends to cause *local foci* of tissue asphyxia and *acidosis*.)

Also that “chilling” of the body surface favors *local protein sensitization* in the naso-pharynx—of which the frequent so-called rheumatic “sore throats” are clinical expressions. That in children these are frequently an isolated manifestation it is true but occasionally and more often in

older subjects the sensitization becomes generalized, and the clinical syndrome rheumatic fever appears.

Again certain substances, *e. g.*, calcium and atropin curb or inhibit the appearance of anaphylactic phenomena. Conversely is it not conceivable that other substances may precipitate or favor their occurrence, and one is inclined to proffer the suggestion that possibly lactic acid may favor or promote sensitization, or generalization of the same when primarily local.

Lactic Acid as a Photo-sensitizer.—The suggestion that lactic acid may promote or favor sensitization reminds one that lactic acid, like other organic and inorganic substances (porphyrins, urea, sugar and silicates), is a *photo-sensitizer*. In other words in the presence of lactic acid the tissue proteins may become sensitized to *light* or ultra-violet rays.

Normal blood, as we know, absorbs light in considerable amounts, and engenders alterations in the chemistry of blood. Now in myogenous acidemia the blood is presumably—by reason of its high content of *lactic acid*—hypersensitive to the effect of light or ultra-violet rays. May we not find in this conjunction of intrinsic and extrinsic agencies a possible explanation why the incidence of rheumatic fever should increase in proportion to a high temperature and hours of sunshine?

The skin lesions of *hydroa estiva* are, we know, produced by the action of light in the presence of a photo-sensitizing pigment, *hematoporphyrin*, circulating in the blood-stream. All cases of hematoporphyrinuria, I know, do not show this phenomenon. Nor do I suggest that in all cases of rheumatic fever photo-sensitization plays an etiologic rôle. Idiosyncratic peculiarities doubtless intrude, but I submit that it may do so in some instances.

The limbs and joints of children and young athletes are frequently exposed for long hours to bright sunshine, and given concomitant over-exertion with resultant myogenous acidemia the conditions requisite for photo-sensitization of the tissue proteins seem fulfilled. Might not this assumption at any rare supply a clue to the *erythema* associated with rheumatic fever.

This the more plausibly in that some skin eruptions have undoubtedly this origin. But apart from *erythematous* eruptions what of the more thinly covered *articulations*, the knee, ankle, wrist or elbow—surely these too are not immune from the action of light, or ultra-violet rays. It seems possible then that in some cases of rheumatic fever the clinical phenomena are the outcome, partly of protein sensitization or anaphylaxis reinforced by the photo-sensitizing action of light in the presence of lactic acid circulating in the blood-stream. Certain disorders in the lower animals lend support to such an hypothesis, and to these I now pass on.

Fluorescent Substances in Foodstuffs.—Sheep, swine, cattle and horses fed on *buckwheat* (*polygonum fagopyrum* and *persicaria*) usually suffer no ill effects especially in dark winter days, or if kept under cover. The immunity, however, is restricted to animals of dark color. But those that are white, parti-colored or piebald, if exposed to bright light, become seriously ill—high fever, dyspnea, digestive disturbances, etc.

Apart from constitutional disturbances the unpigmented areas of the skin and the mucous membranes become the seat of *erythematous*, *eczematous* or *edematous* eruptions, and in severe instances the affected portion of the skin may become gangrenous. If taken in time the animals recover on return into darkened stalls, or even if the hair be artificially colored.

Under the same conditions of light and

food, black animals remain well, and the same is true of those kept in dark stables. Even after buckwheat has not been taken for three or four weeks, the symptoms reappear if they are put out to grass in sunshine. The symptoms, it is thought, are partly due to anaphylaxis, and partly to the combined action of light and fluorescent products contained in the food.

While the toxic symptoms may be produced by any part of the buckwheat, the grain, straw or stubble, the most active is the *green* plant itself. From this a colored fluorescent substance called "fluorophyll" has been isolated, and presumably this *photo-sensitizing* substance permits light rays in its presence to sensitize the tissue proteins.

There is here much need of further research. For apparently such fluorescent substances exist in other foodstuffs, in lupines, vetches, Swedish clover, all of which may produce similar constitutional disturbance and *erythema* when fed to animals. Moreover, it has been noted that animals, e. g., horses, pigs, fed on certain fodder—heated grain, excess of barley or maize or damaged hay—exhibit symptoms indistinguishable from *rheumatism*.

Considering then the increasing incidence of rheumatic fever in proportion to hours of sunshine, is it not possible that some of the green foodstuffs partaken of in spring and summer seasons many contain fluorescent substances? The *erythematous*, like the *eczematous*, eruptions of children, have in some instances been traced to *food-sensitization*. Certain cereals, notably oats and wheat, and certain vegetables, particularly cabbage, would appear to be most often responsible. Is it not possible that these contain fluorescent bodies, and that the sequential *erythema* are partly due to anaphylaxis and in part to the action of *light* on such

hypothetical substances circulating in the blood-stream?

Again, it has been suggested that certain cases of eczema are due in part to a toxin absorbed from the intestinal canal which sensitizes the skin to sunlight. This reminds one of the fact that those mysterious bodies—the *porphyrins*—are found in excess in the urine and feces in *rheumatic fever*. Normally, only a trace is found in these excretions. Now, like hematoporphyrin, the urinary porphyrins are *photo-sensitizing* pigments, but to a lesser degree. Nevertheless, their capacities in this direction are sufficient to sensitize mice to light rays. Why they should be found in excess in rheumatic fever is as far as I know unknown, but in light of our previous remarks allusion to them seems permissible.

Therapy and the Action of Salicylates.—Unhappily, our treatment of rheumatic fever still leaves much to be desired. For as Stockman says, "What is wanted is a remedy that will abolish or lessen the chances of injury to the muscles and valves of the heart in the treatment of severe rheumatic affections." This being so, it is imperative that any possible *prophylactic* measures should be thoroly explored.

If my contention as to the *anaphylactic* origin of rheumatic fever be granted, it follows that in children—actually rheumatic or coming of rheumatic stock—any food idiosyncrasies they exhibit should be carefully studied, and any hypersensitivity to particular proteins as far as possible ascertained. Also by reason of its probable bearing on *cardiac* nutrition it is essential that their diet be rich in vitamines and well balanced.

Again, seeing that a state of *acidosis* has by modern methods been found to exist in some cases of rheumatic fever it is highly desirable that their liability to so-called

"bilious" attacks should be taken seriously. Intelligent mothers in my experience seem instinctively able to foretell an oncoming attack, which a timely dose of calomel or grey powder may avert. Any such attack may be the prelude to an outbreak of acute rheumatism, and this being so, every effort should be made to ward off the threatened acidosis. Nor should we in older subjects or adults discount this possibility of acidosis, seeing that Sellards' and Frothingham's findings occurred in adults. Nor should we forget that the alimentary derangement in their instance is often very marked with a tendency to gastric dilatation.

Again, in those instances in which the disease follows directly upon over-fatigue and exposure to cold, either singly or combined, the possibility of a state of *myogenous acidosis* and *acidemia* should be borne in mind. I have quoted Sir Almroth Wright's remarks on the difficulties to be surmounted in its treatment. Discussing the application of *warmth* for the purposes of restoring the circulation, he warns us that it may be too successful—in other words, may cause more lactic acid to be washed into the blood than can be quickly burnt up,—hence the acidemia would be increased. In his own words "*Festina lente* would seem to be in the matter of heat a counsel of perfection".

As it happens, the combination of salicylates with bicarbonate of soda would appear to meet all indications re the *acidemia*. Possibly too may mitigate the *histo-acidosis* if Latham's claim be true, *viz.*, that salicylates check the formation of lactic acid in the system.

The Action of Salicylates.—That salicylates control the joint swellings of rheumatic fever is undeniable, but this response *per se* lends no support to the *infective* theory.

The clinical course and features of *streptococcal* arthritis are wholly unlike the arthropathies of rheumatic fever, which salicylates in their case are impotent.

Moreover, it has been pointed out by Ivy MacKenzie that there is "No instance of infection outside the protozoal group, yielding to a drug of this kind." Nevertheless one may recall that the arthropathies of *gout* react in the same manner to *colchicum*.

Again, some arguing against the specific action of the salicylates contend that they neither prevent nor control the *cardiac* lesions. As to their *prophylactic* action how eliminate the possibility that—in the many instances unaccompanied by cardiac lesions—their *non-appearance* may be due to the action of the salicylates? Or how—for that matter—eliminate their possible responsibility for the *transient* character of some cardiac lesions when installed? For it is admitted that the cardiac like the joint lesions may in some instances be *transitory*.

Nevertheless, the fact remains that generally speaking salicylates are unable to control the cardiac lesions when established. This appears to point to the existence of *local* controlling factors in the *heart*. I would suggest that salicylates, while able to prevent or control the morbid mechanisms responsible for the *vascular endothelial poisoning* incidental to anaphylaxis, are impotent to control the tissue *autolysis* that may ensue in sequence thereto.

As stated, cardiac and unstriated muscle are more prone to autolysis than striated. Moreover, experiments *in vitro*, to learn the influence of certain antiseptics on autolysis, reveal the fact that of those ordinarily used, salicylic acid has the least marked inhibitory effect. Moreover, sodium salicylate was found actually to favor the process of autolysis. As to the actual *modus operandi* of salicylate I would suggest that they exert

a *de-sensitizing* effect—an indication for their exhibition during quiescent periods—to prevent relapses.

Moreover, if anaphylaxis operating thru the medium of minute foci of vascular endothelial poisoning be the cause of the cardiac lesions, a cautious administration of vaso-dilators might correct the tendency to vaso-constriction of the local arterioles with its associated capillary stasis. In addition a course of calcium salts might be beneficial, in that it tends to curb the tendency to anaphylactic reactions. The tendency to relapses in endocarditis is so obstinate and the consequences so irremediable that I make no apology for the suggestion.

In conclusion, my motive in writing this paper will have been achieved if in any way it suggest a more catholic attitude on our part towards this most mysterious disease. That the salient factor in its production may be an *infection* is of course quite possible, but the sum of my reflections is that even if this prove ultimately to be the case it will be found that the said organism will not be *the cause* but *one* of the causes of rheumatic fever.

Hence I would urge, in view of the economic loss occasioned to the State by the associated cardiac lesions, that we be not obsessed by the infective theory to the exclusion of other extrinsic and intrinsic factors which may ultimately prove to be of equal etiologic valency.

Conclusions.

My conclusions in the main are that:—

1. There is a "rheumatic" diathesis—an innate predisposition to develop certain manifestations under favorable conditions.
2. Its hereditary transference is secured by the transmission of a tendency to *protein sensitization*.
3. An *ill-balanced or vitamin-deficient diet*—thru the *structural changes induced thereby* in the *heart* and *alimentary mucosa*—favors the occurrence of sensitization

and accounts for the predilection evinced by the "rheumatic" virus for the *heart*, especially in children and adolescents.

4. The arthritic, cardiac and other phenomena of rheumatic fever are the outcome of *anaphylaxis*, working thru the medium of *vascular endothelial poisoning*.

5. This same vascular endothelial poisoning with its associated circulatory stases might possibly account for the phenomena of *chorea*.

6. The responsible *antigens* may be of *bacterial, animal, or vegetable origin*.

7. The exciting causes in children are often *alimentary disturbances*, so-called bilious attacks—in adults most commonly *muscular over-exertion* and *exposure to cold*.

8. These same exert their effect thru acidosis and acidemia which in older subjects may be of *myogenous* origin.

THE ECONOMIC PROBLEMS OF MEDICAL PRACTICE—OPPORTUNITIES OPEN TO MEDICAL STUDENTS ON GRADUATION OR AFTER INTERNESHIP OFFERING AN IMMEDIATE LIVING WAGE.¹

BY

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The intent of the following article is to be of some assistance to the members of the graduating classes of our medical colleges, and to the graduating internes from general hospitals, who must seek locations that promise immediate monetary return above bare living expense. It is hoped that a brief summary of such openings outlining the advantages and disadvantages of each will be an aid. At any rate, it is believed

¹ Remarks on the Adaptations After Graduation and Interneship to Meet the Economic Conditions and Local Problems Incidental to Starting in Private Practice.

This is the first of a series of practical articles designed to help the young physician to establish himself successfully in his life work.

that the recounting of the experiences of physicians who have had to accept such will be of interest to many. The examples cited occurred fifteen or eighteen years ago, since when the sections from which much of the demand came for young physicians have changed somewhat but the general conditions are about the same now as then.

It is extremely unpleasant for a man to discover after an expensive college course that the possession of the degree of doctor in medicine does not automatically supply an opening at a wage commensurate with his investment of time and capital.

Even that very useful adjunct to the college course, the internship in a general hospital, will be beyond the reach of many who graduate from our medical colleges because of the debts accumulated during the college course. Others who accept such internship are faced on or before its conclusion with an urgent need for money beyond that required for a bare living.

There are several fields open to such young physicians offering modest but certain pay, ethical to accept, in which they will be required to spend nothing for equipment or supplies other than for the personal requirement of clothing. In addition to the salary, each of these positions offers a certain amount of valuable experience professional and general.

Among the opportunities that are available each year are numerous coal and metal mining companies which of necessity must employ one or more physicians on a fixed salary basis. The large construction camps carry one or more physicians on their payrolls when building bridges, dams, railroads, canals, irrigating projects, and other large jobs where many men are employed at a distance from the populated centers or where the law requires that a licensed physician be at the construction site during

working hours. Large lumbering projects and big plantations often find it necessary to employ a physician on salary that they may have surgical and medical treatment available for their workmen and families. Certain passenger boats in the Atlantic, Pacific and on long coastal voyages must employ a licensed physician. Nearly all of the special State and private hospitals and sanitaria pay their resident physicians a salary. The Army, Navy, Public Health and Marine Hospital Service each require a number of physicians yearly to fill vacancies. Insurance companies and other large industries employ a number of physicians. Each year certain busy practitioners are seeking recent graduates as assistants either on a cash or percentage basis. There are a few opportunities as physical directors for the large schools or colleges. A few of the large drug and instrument houses offer employment to physicians as salesmen or in their laboratories. A few medical publishing houses may be mentioned in this same class but are hardly to be considered by any one wishing to make the practice of medicine or surgery their ultimate goal. Unopposed country districts, while not being in the salary-paying class, are open to nearly every beginner at a very nominal outlay for equipment and supplies and will generally support the practitioner from the start.

Out of such a list of opportunities it would seem only a question of which one to choose. Unfortunately for the one seeking employment it often happens that the place desired is sought after by many others. The graduate without experience as an interne is at a disadvantage, for in nearly every instance the interne will be given the preference, so that until the supply of such is exhausted the pickings are not very plenty.

Mine jobs are, in general, the best from

an experience viewpoint. About every mine of any size there quickly springs up a village; the workmen bring their families on as soon as accommodation for them is available so that the mine surgeon has not only the men but their families as well to care for, which will offer him a chance to gain valuable experience in general practice. Plantation work offers the same inducement. Construction jobs, in general, limit one's professional practice to the men employed. This is generally true for other industrial work. School and college positions as athletic adviser and physician are also limited in the scope of one's general experience for usually there is a clause in all such contracts which forbids the physician from attending any private cases not connected with the school or college.

Several years ago one of the seniors in a large city medical college was compelled by financial difficulties to give up taking the internship which he had won (and expected to enter upon after graduation), and seek a salaried position. He had been a "varsity man", and the Army at that time was asking particularly for physicians who had been "letter" men in college. He applied to both Army and Navy but was at once told he was ineligible because he had not had a year's internship. He tried the insurance companies with the same result. The first of May a notice was posted on the bulletin board asking for two graduates to go to a coal mining company in Old Mexico. He applied for one of the positions and had an offer from the mine if he would report at once for duty. The final examinations were nearly over and he took the letter with the offer to the Dean. The Dean was quite anxious that he take the internship but when the financial difficulty was explained, he did everything to help the fellow. It was arranged so that he might leave after

his last examination to prepare his kit for the trip and be in readiness to start the day he should be notified of the result of his examinations if that result were satisfactory. The afternoon that his classmates paraded in cap and gown to receive their diplomas Wright was entering Mexico. It had been a five-day trip from New York and the Coal Company had entered him on the payroll the day he left New York so he had that much pay due him when he arrived at the mines. After a few days at the main camp he was sent to a small mine being operated by the company twenty miles from headquarters.

In this camp where he was in full charge of the medical work, there was but one other who spoke English, the local superintendent, who had to act as interpreter for the doctor who knew no Spanish. There was very little medical work in this camp, a few minor injuries, a few cases of scabies and mild ills constituting his medical duties for the few weeks that he remained at this mine. He spent several hours a day on an intensive study of the language, mastering a few words of instruction and a few questions that he must ask to get a history of the cases of accident necessary in making out his report to the chief surgeon. This camp was the trial ground of nearly every doctor that joined the company (while it was in operation). After an apprenticeship there, one was transferred to a larger camp or taken on at headquarters as utility man, to be sent to the other camps as relief to the doctor-in-charge, while he took his vacation. The man referred to was sent to quite a large camp for a month, as the doctor was sick and unable to carry on the work. In this camp he had to learn the vagaries of a range-bred mustang, for the daily rounds required a ride of twelve to fifteen miles. His next shift took him to headquarters as

utility man. He was assistant, while the regular assistant went on his vacation of two weeks, then assistant to him while the chief took a fortnight's holiday. Small-pox broke out in one of the camps and he spent a week there helping to vaccinate the women and children in that camp. With this camp protected as well as it was possible by vaccination he was shifted to a camp where several hundred Japanese miners were employed. The doctor-in-charge of this camp was a Japanese, a graduate of the University of Tokio. The last batch of coolies to arrive had been exposed to typhoid somewhere on the trip up from the coast and thirty of them developed the disease a week after their arrival. As soon as the typhoid epidemic was under control, he was sent to take full charge of the camp where he had to take the long rides.

In this camp he completed the greater part of his two years' stay in Mexico. The workings comprised three camps strung along a river valley for six miles and he was required to visit each camp daily. There were about five hundred men on the payrolls of the three slopes in operation, which with the miners' families made quite all the medical work one physician could comfortably care for (working as he had to there). He not only had to prepare all his own surgical dressings, even to rolling the bandages, but he had to dispense his drugs, which were largely tinctures and fluid extracts or the powdered products. Tablets were too expensive to the mind of the company purchasing agent, thru whom all orders had to pass from the medical department. In addition the camp surgeon was health officer and sanitarian for the community for a pure water supply and the other sanitary requirements.

The mines were near enough to the Tropics to make sure that several Tropical

diseases were brought into the camps each year by workmen coming up from the hot coast country. It was a great snake country, and rabies was quite frequent among the half-wild goat dogs.

The physician practicing in such a camp for eighteen months saw cases of nearly every ill that befalls humanity, both accidental and pathologic.

The physician whose experience is being discussed treated a fracture of every bone in the body during his stay in Mexico, all the usual dislocations and some rarely encountered. He had a few gun-shot wounds to treat, also several knife wounds; he did three major amputations, two of them he performed unassisted with morphine as the sole anesthetic, as there was no one who could give a general anesthetic, and the emergency demanded prompt operation.

He had experience in every branch of the profession, for he had to deal with the old, the young, male and female, not to mention a few operations on the mine mules which were injured and had to be sewed up. He could not have found a hospital that would have given him a wider range of cases than he had to treat alone, on his own best judgment. He knew none of the lingo at the start, but he learned this sufficiently well to do without an interpreter in six months. At first he was compelled to make his diagnoses on physical findings and observation for he could not get much aid from the history. Except for the small laboratory and meager equipment that he purchased and used himself he had no help from that source.

Mine work is somewhat similar everywhere—the life is rough, it takes considerable nerve to stick it out for one must take more than the average risks. The pleasures are crude and often not too nice; it calls for a steady head to mingle with the men during

the time off and not get overbalanced. The same objections are met in construction work, but one does not encounter it on the plantation (except) if one goes to Hayti or some such country where no white is safe. (Of course the physical risk is great in all lines.) The physician referred to prospered to the extent of paying off all his college debts and accumulating a stake of \$1,000 with which he established himself in the town of his choice in the United States after his two years in Mexico.

In 1909 another young doctor emerged into the world of medicine with his diploma and a State license for New York. Having the license made him eligible to accept a position as surgeon for one of the contracting companies that was to build a section of the aqueduct then under construction from the Catskills to New York City. The camp to which he went was close to the intake of a large city's water supply, so that every known precaution had to be employed to protect that supply from contamination by the men in the camp, or on the job. From a medical point of view this physician gained very little experience that was of value for there were never more than three hundred men under his care.

As a practical study in sanitation it was excellent for he had an opportunity to watch the planning and construction of filter beds to purify the water from the camp and from a deep tunnel. He had to supervise the collecting and disposing of all the camp kitchen refuse and the human excreta, to render it harmless. He also had an opportunity to study closely the group handling of men. Of a studious nature, he put in many hours re-reading his text books and such other medical literature as he could secure. In the early winter he was offered a better position with a cane plantation in Porto Rico during the six months' grinding sea-

son. He went to the island the first of January and remained until July.

His experience on the plantation was splendid in every way. As he was the only licensed physician available for a population of 5,000 he was kept very busy. So much of his time being spent among the natives, a slight grammatical knowledge of Spanish from his school days enabled him to pick up a working knowledge of the language very quickly. His income from patients not employed on the plantation equalled his salary so that he landed in the States with nearly a thousand dollars which he found ample to start him in practice in the town of his choice. His experience with Tropical diseases, while of no great value to him in the town where he is practicing, undoubtedly gave him a wider range of thought than he might otherwise have had. The necessity for an extra close study of objective symptoms, to make up for a lack in history and subjective symptoms, was of great value.

One of my classmates had what he considered at the time a bit of very hard luck, tho the ultimate result was mighty fine for him. He left New York the night after his graduation to fill a position as surgeon with a lumber company that was cutting off some virgin timber in one of the Louisiana bottoms. It was a tough post for a Northerner even with the fair hospital building which the company had constructed. His work consisted largely in dealing out calomel and quinine to the workers, with an occasional cut or injury to treat. He intended to stay a year but the last of August a letter reached him offering him the post of athletic adviser and physician to a small college.

The doctor at once wired, accepting the college post, and saying he would start North as soon as his present place could be filled. The lumber company was completing another job on which they had a phy-

sician who was glad to continue on with them in the new undertaking and he came the following day. The doctor left on the second day for New Orleans, but as his train pulled into that city, a telegram was handed him, stating that thru an error the college post was not open to him, as he had been informed. As he had paid off a note with his first month's check, he had barely enough money to take him home, with nothing in view when he reached there. As he walked out of the New Orleans station, a United Fruit Shipping sign attracted his attention. Inquiring the way to the shipping office he applied for a berth as ship surgeon on one of the passenger boats. He was in luck, for there was a boat in the Central American trade needing a surgeon, and in less than a week he sailed on his first trip. After his third trip he resigned to accept a plantation position in Cuba offered him by a man who had been a passenger on his last trip.

He spent nearly two years in Cuba where he had splendid practical experience and acquired a good working knowledge of Spanish. On his return to the United States he chose to locate in a city with quite a colony of Latin-Americans. Thru a few letters of introduction from friends he had made in Cuba, plus his ability to speak Spanish and his understanding of the character of these people, it took him but a few weeks to acquire a practice that met his outlay. He landed with about \$2,000 expecting to use nearly all of this reserve in establishing himself. At the end of his first year he had a well-appointed office, his equipment all paid for, and with nearly the full amount of his original stake still to his credit. He stands high on the visiting staff of two of the city hospitals now with one of the best medical practices in the city tho he began knowing no one. His knowledge

of Spanish and the Tropical diseases which he acquired in Cuba, were instrumental in giving him an opening with each hospital.

In reviewing his experiences he said of the few trips that he took as ship's surgeon: "I drew my pay for each voyage and had a pleasant enough time of it but as far as practical medical experience went it was of little benefit. My association with the people traveling on the boat was interesting and my game of bridge improved very decidedly, but I cannot say that my ability to diagnose or treat anything, not even seasickness was bettered in the least."

While the examples cited have been from men who went into the South, it does not mean that there lies the greater chance now but merely that during my early years in the practice of medicine more opportunities were offered from that section. At present our own Northwest and Canada seem to offer more and better openings.

We need say little regarding the special hospitals, either private or state for you are all acquainted with the scope and limitations of such as training grounds for a career in general practice or surgery. Each offers a small wage, a small amount of general medical and surgical experience, with a steady close application to a diet of specialism which, unless one thoroly enjoys that narrow field, may become nauseatingly monotonous in six months. Nearly all these institutions offer access to good medical libraries thru which you may carry on a profitable course of reading with or under the direction of the senior physician; few who have been hard at their studies as the young graduate the past years will avail themselves of such an opportunity even when the hours are short and the work not strenuous. The pay while small is all velvet, for where one's food and lodging are found, one requires very little money.

Even tho the physician wishes to follow this special work as a career it is wise to take a year or two in a general practice before settling down to it, for without the broadening influence of treating the whole in his own manner he will have much difficulty in overcoming the lopsidedness that specialism engenders.

Those who are fortunate enough to secure an assistant's place with a well-established physician or surgeon, are to be congratulated, for granted that both hit it off well together, he is getting most valuable practical experience in pleasant surroundings at a salary that will steadily increase as he becomes of more value while at the same time building up a clientele which will be his when he takes the plunge and outfits his own office. A word of warning to the graduate without hospital experience: Do not waste much time expecting to find such an opening for few physicians seeking assistants will accept a man who has just graduated.

Information as to the requirements, duties, and opportunities offered by the Army, Navy, Public Health and Marine Hospital Service will be supplied to any physician who is interested by the officers of the Governmental branches. One of the fixed requirements in time of peace is that no doctor will be accepted for examination, who has not had at least one year in a general hospital or in private practice.

My summary of two years of field service under war conditions is this—a period of non-progression as a physician in general practice. Financially rather more than a dead loss, for it took all the capital accumulated in my years of practice before the war, to get reestablished after it.

Any young physician entering the service in peace time should do so with the full intent of making it a career, as such it has

certain advantages. As a means to gain practical experience for a future private practice, or as a method to gain a stake to establish yourselves in such, it is not to be recommended.

There is an opportunity at present open to nearly all at the completion of the college course to enter directly upon private practice with a fair chance of making more than a bare living wage from the first week even tho they are only armed with a diploma and a State license, plus a few dollars' worth of drugs and instruments. Because any one may do this does not mean that such work is unimportant or undignified. Rather it is because the medical practice in most country districts and small towns is hard grueling work, a good bit of the pay for which one receives in the love and respect of men and women who have little else to give.

In studying over this phase of the work the old saying often recurred to me: "A kid may have the money to go buy a ball and a glove, but that won't make him a ball player."

So while a physician having a diploma and license may practice his profession in an unopposed field, it does not mean that he will be a real "player in the game."

Country doctors have been loved, respected, cartooned, lampooned, and joked about as have no others. Few even in the profession, however, realize that they have probably added full as much to the progress of our profession as have the city practitioners. There are many instances known individually where far-reaching ideas have been suggested by small town physicians, worked out in detail by men with access to large hospital wards where the material was abundant for study, and reported to the profession without a word of mention of the doctor who first outlined the original proposition.

The writer is just a country doctor, but one who is proud to think he has been able to hold his end up, and associate with the keen-minded, clear-thinking, unassuming men who are his colleagues of today. It is because the country districts in many states need earnest, keen, young doctors to carry on the work of modern medicine, that the writer hopes he may interest some who may be attracted by the lure of the city, and lead them to take up their life work in the rural districts.

Before discussing more in detail the life of the country doctor, and the rewards in money and experience that fall to his lot, I would like to sketch a few instances of what some of the physicians of the past generation have added to medical progress altho unknown in medical history or literature. The observations of those men led them to adopt lines of treatment that are today considered the best, tho not generally adopted by the profession for years after they had proved its efficiency.

The head of this group was a lecturer in Dartmouth Medical College tho he was a general practitioner in a small town. During the Civil War he was placed in charge of one of the New England hospitals for the wounded. His staff of medical officers he was permitted to choose largely for himself. He picked doctors who were country bred, some who had been under his tuition in college and some from other medical schools.

Hospital gangrene was the most dreaded of diseases at that time and surgeons were searching for some relief from the menace of this scourge. The medical staff at Hospital B was as keen on the hunt as any. One of the medical officers noted that two patients with unaffected wounds, one on either side of such a case, developed the dread infection a few days after the gangrene case was placed in the bed between them. Another

reported that he had noticed that the gangrene developed in patients handled after an orderly or doctor had dressed a case of hospital gangrene, while patients handled previously did not get the disease. As a result of these observations the professor ordered all gangrene cases isolated. They did not have ward room to permit of this, so tents were erected for these patients in one corner of the grounds; special orderlies were detailed to care for these sufferers, also a medical officer who did not tend any other wound cases except those in which the gangrene had already developed. So successful was this simple expedient that the hospital records showed the development of no more cases in that hospital after such cases were isolated, except in patients admitted from other hospitals near the front. One of the higher officers of the Surgeon-General's staff on a visit to the hospital saw the record of the results that had been obtained and noted the simple measure that had given what was then almost a marvelous freedom from hospital gangrene. This officer instituted the same line of treatment in one of the large military hospitals near Washington, and to him is given full credit for having thought out and instituted this treatment.

The medical officer in charge of the gangrene cases noted that all his patients did better in the tents than they ever had in the wards tho he followed the same line of treatment. One of the cases developed pneumonia, and tho the patient was weakened by the gangrene, he made a nice recovery. A second case of pneumonia did equally as well.

There had been considerable discussion over the first case, as some of the staff thought the patient should be moved into the main building to give him a better chance to recover. The second case made

them all think, for the splendid result could not be due to the medication as the hospital routine had been followed. There was a strong controversy among the staff, but not to the extent of putting all the pneumonia cases in tents, altho part of them were so treated—in fact all the patients who would agree to being placed under canvas. The results of the cases so treated were distinctly better than those handled in the hospital wards. The hospital, however, was abandoned before enough cases had been thus treated to make an impression on any except those actually watching the experiment. When the hospital was discontinued every one of the young physicians returned to his home district to practice his profession, and each one of them carried what he had learned into his private practice.

One of those men told me laughingly what a run in he had with an older physician and the parents of a typhoid case, in which he followed the special line of hospital treatment. They had worked it out at Hospital B, namely that of giving the patient all the water he wished to drink and allowing him to take milk, but no solid nourishment. It seems strange to us that a physician today could be accused of malpractice for thus treating typhoid. One can imagine what nerve it took for a young man starting out in practice 55 years ago to institute such revolutionary methods as the giving of water and milk to a typhoid fever patient, and fresh air to a pneumonia case.

Not very many years ago one of this group took me up into his attic, where he showed me an appliance that he had worked out one or two years after his discharge from the army service, and by means of which he had hoped to pipe fresh outside air directly to a patient in bed in a room sealed as tight as such sick rooms were in those days when a person was suffering

from a lung disease. The old doctor's idea had been to put a flattened tin funnel under the window so that by means of a flexible tube fresh air could be delivered to the patient without causing a draft in the room or cooling it off. You will understand how splendid his intention was and how badly he was grounded in physics to expect such an apparatus to do what he expected.

Not long ago I saw in operation an ether inhaling apparatus, likewise the invention of a country doctor, which seemed to me to be the simplest, most economical device for giving ether anesthesia that I have ever seen. It was as safe for the patient as any method and nearly as economical in its use of ether as the Bennet type of inhaler without any cumbersome paraphernalia or parts to wear out easily that would be expensive to replace.

Numerous other instances might be cited of truly great advance in medicine originating from physicians practicing in small towns. The idea was handed freely to a physician connected with a great hospital for which clinical material was available to prove the theory and claim all the glory.

What does an unopposed country practice mean? Briefly this, that the village or township into which the physician moves has no other licensed practitioner of medicine within the radius of the so-called local rate—that is, until he goes beyond the line at which he adds a certain fixed amount for each call for mileage, there is no doctor who follows the accepted fees of the county or state society, who will make calls at the local rate in that zone. The local calls in such villages are rarely sufficient to more than pay expenses. As one goes on year after year, most will contribute about that amount. The doctor to more than split even, must win a clientele from the territory beyond his local zone. A part of the surrounding country is

always contestable territory. In nearly all rural districts one finds the doctors have come to look upon certain areas as their territory even when there are several other physicians available for the territory beyond the local zone at the same fee. The nature of the roads and the distribution of the population enter into this demarcation, especially for the winter work. Places easy of access in summer may be very difficult for one to reach in winter.

Patients who come to regard a physician as their family doctor expect him to care for them the year round for which reason the wise physician endeavors to confine his work to an area that he can reach conveniently at all seasons of the year.

This is of particular interest to all beginners. Practically every such field will give you enough for living and operating expenses from the first week; whether a physician can make good and work up a well-paying practice depends on his own ability.

The exact amount of equipment required varies with the district in which a doctor settles. In addition to the few laboratory implements and the instruments that one must acquire during the college course for the college work, a good pocket case of instruments, a hypodermic outfit, catheters, and a pair of obstetrical forceps will usually meet all one's needs for some time. A drug satchel and an emergency case for obstetrical and surgical work are essential. How great a quantity of medicines and surgical supplies the young doctor requires will depend on his distance from the source of supply.

In many towns it has become the custom for the physician to work in conjunction with a drug store; some physicians own and operate these stores, while others have their offices in the same building with them. They either stock their bags from the store

supplies or buy thru the store in small quantities as needed. Many such stores do not have a licensed druggist and the physician himself compounds any prescriptions that he may write for preparations other than those which come ready for dispensing. Where this can be done it reduces the physician's outlay for drugs to the minimum. In a community where such scheme cannot be adopted you will find that any one of the reputable drug supply houses will sell you a bill of goods sufficient to meet all requirements on sixty or ninety days' orders. Some even will provide a stock on the basis of payment as the medicines are sold or dispensed. House and office rents (in such places) are usually low. If the community is anxious to have a physician locate in their midst, one will find that people will make it as easy for him to secure suitable quarters as they can.

One of the big factors in the equipment for country work is the means for getting about to make calls. In securing the necessary horse, or car, one will again find the way easy if he chooses a village anxious for a physician. He usually will be given terms that he can reasonably expect to meet from the returns of his practice. The financial returns for country practice compares favorably with the pay received in ordinary contract work, with the difference that the surplus will go into equipment rather than a savings account, at least for the first few years. The increase after the first year should be considerably more from this private practice than what you could expect from a mine or other contract work. The author collected a little over \$2,000 from his first year's work in private practice, with operating and living expenses of about \$1,000. To be sure, that was more than ten years ago, but I believe the ratio under similar conditions now would be approxi-

mately the same, for the fees in such districts have increased to meet the increase in the cost of living and supplies.

The work is clean, healthy and interesting to all who enjoy living in the country. The people one treats are more truly American than one will find in the (larger) cities, and the large manufacturing districts. One treats all ages, all sexes, for all conditions from head lice to toe corns. One is not only doctor and medical adviser but confident as well. The doctor is looked upon as non-sectarian and non-partisan so individuals of all creeds and beliefs will tell the doctor their troubles. Domestic difficulties, or legal tangles can be discussed freely with "Old Doc," and his advice sought. It is safe to say that many a difference has been smoothed out by the family physician which would otherwise have broken up a home or made lasting enemies of neighbors. It is easy to visualize the power some of these gray-headed old doctors are in their communities, tho they go about their business in dusty coats and baggy trousers.

Many have been, and will continue to be influenced by the vast difference in the gross income of the successful city practitioner as compared with that of the country which by such a comparison appears as a mere pittance. If, however, you compare what the country doctor earns with the earnings of the men among whom he is working you generally find he is a leader as he will be in the social and intellectual life of the community. The average physician can become a power in the small place while if he elect to remain in the city he stays as the average sort of being in every respect and spends years of worry and fight to meet the rent collector on his monthly round.

I would like to quote what I heard a surgeon who fifteen years ago was rated as one of the five most skilful American surgeons,

say of the country doctor. He had come to a small town to perform a delicate operation on a patient of one of my colleagues. He turned to me as we were on the way to the station to catch his train and said: "Doctor, do you know operating before some of you men doing general country practice is more of an incentive to me to render the best that is in me than to work in a hospital clinic before the most renowned surgeons of the world. I feel that you are watching me as a human being working on another human; that while you might not notice any error in my finished technic as an operator you would instantly spot any slip that I made in the handling of the case that might militate against the ultimate recovery of the patient. I have been indebted to some of my friends doing general country practice for some very valuable suggestions, tho those men disliked to use a knife for such a simple thing as opening a boil."

THERAPEUTIC USES OF THYROID GLAND.

BY

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Probably no subject in the range of physiology or of therapeutics has attracted more attention than the function of the thyroid gland. Victor Horsley had luck as well as science on his side in being able occasionally to produce in thyroidectomized animals the curious symptoms of what is now known as myxedema. For he knew nothing of the parathyroids, and by fortunate accident he seems, nevertheless, to have been able, in some of his thyroidectomies, not only to leave some parathyroid tissue behind, but to find individual animals which had not enough supernumerary thy-

roids (which are ordinarily numerous in rabbits and dogs) to compensate for the removal of the major glands at the sides of the windpipe.

Parenthetically we may note, in the case of dogs, that the ordinary textbook statements that myxedema can be produced regularly by the removal of the large glands in the neck, are entirely erroneous. W. S. Halsted's work¹ on this subject, which will always remain a model of scientific painstaking and accuracy, has shown that in the dog small accessory thyroids may be found at irregular intervals all the way down the neck, even to the level of the pericardium.

Next in importance to Horsley's work came Baumann's discovery of iodine in the thyroid²; and E. C. Kendall³ in the last fifteen years has thrown a flood of light on the dark places of thyroid chemistry by his epoch-making researches.

In order to understand more fully what the thyroid therapeutic problem comprises, we may perhaps with advantage subdivide the subject a little, and consider in succession the sources of raw material, the processes of preparation, the contraindications and indications for treatment, and finally some details of bedside administration.

As to sources of raw material, sheep glands, being large and easy to get at, were once popular. Presently, however, someone discovered that they owe their size often to cystic and fibrous degeneration, and that instead of being a safe reliance they are often inert, and worse yet, often toxic.

After the researches of Baumann (*l. c.*) indicated that iodine was the important constituent in the gland, and when the working out of an easy and practical quantitative test for organically combined iodine by Riggs⁴ and A. Hunter⁵ had simplified the chemical technic, it became practicable

to assay the iodine in thyroid tissue, and make the iodine percentage the basis of standardization. Hunter's process is not very long or very hard. Essentially it requires the oxidation in a nickel crucible of a weighed amount of dried gland with a mixture of carbonates. This converts the organic iodine to iodate or periodate, which by an additional process is titrated.

In answer to the question "What glands contain most iodine?" R. Hunt's analyses were timely⁶. They are still thought to be substantially correct. Guinea-pig and dog were found to have very little. The suckling human infant appeared to have none (getting its requirements possibly from the mother's milk). Other animals were listed as follows:

Sheep	0.176%
Beef	0.25 %
Adult man	0.236%
Hog	0.33 %

From the above table the conclusion has been drawn that pig's gland is the best for therapeutic purposes. Many specialists write for this gland exclusively nowadays, and most manufacturers use it.

It must not be forgotten, however, that bullock's gland comes nearest to the human percentage. I am also told by the veterinarians generally, and the statement seems to be borne out by Sisson's classic work on "Veterinary Anatomy" that bulk for bulk the bullock's thyroid is smaller than that of any other commonly available domestic animal. Both its density and its iodine percentage are points favoring its therapeutic use, and as far as my personal experience goes, I have found it very satisfactory. Probably no one will question that the worst extract of all for therapeutic purposes is that from the thyroid of the dog. This gland is not only scanty in the supply of iodine, as already mentioned, but in its

action on other animals it is remarkably toxic. I have seen a sheep lose half its weight and become desperately ill with diarrhea, fever and tremor from one large subcutaneous dose per week of saline suspension of dog's thyroid for three weeks.

It is a curious fact that all raw thyroid is richer in iodine in summer than in winter. The researches of Seidell and Fenger⁸ and of Fenger⁹ have been pretty generally confirmed as to this point. One New York specialist that I know emphasizes this fact, and to certain of his patients gives only summer-gathered glands. Personally, I have never been able to see any difference so long as the gland after drying is standardized to a given iodine percentage.

Passing to the preparation of raw material, there is only space to say briefly that most dealers buy their raw material nowadays in bulk, *frozen*, from the Chicago and Kansas City meat packers. Personally, I doubt the advisability of this. One cannot be sure that autolysis does not take place, even when the glands are well frozen; and when the freezing mechanism goes awry (as it does) decomposition proceeds with the greatest speed.

The drying, too, is often done too slowly, and at too high a temperature. Furthermore, nearly all the commercial chemists emphasize the removal of fat (with acetone or some other fat solvent) from the crude gland; but the fat solvent is apt to dissolve or destroy also some of the active parenchyma of the thyroid cells. At my instance several New York dealers are now selling thyroid tablets made without fat extraction and without freezing. Perfectly fresh glands are worked up in suitable lots each day, and the tablets are ready for prescription six hours after the animal has been killed. These tablets are efficient in ex-

tremely small doses, and toxic effects are very rare.

The dry whole gland, of suitable iodine content, is still the most popular thyroid medicament. Some clinicians ascribe peculiar virtues to globulin, nucleoprotein and lipoid extracts. Kendall's thyroxin (*l. c.*), which is a definite chemical compound, apparently, and which is said to contain 60 per cent. of organically combined iodine, is specially useful when the dose has to be given intravenously. Doubt has been expressed whether thyroxin contains all the physiologically active material that fresh thyroid gland contains (Swale Vincent¹⁰ and others). Kendall himself (*l. c.*) candidly confesses he is at present unable to answer the question. Sometimes one may with advantage give whole gland *and* thyroxin together.

From the exhaustive chemical researches of today it seems a "far call" to the days I heard recalled by an elderly neurologist at a medical meeting some years ago. His messenger, provided with the proper "credentials," went every day to the abattoir and brought fresh thyroid, which was minced in the doctor's office and fed to the patients in sandwich form.

We come next to the question when to give and when not to give thyroid.

As to contraindications, it sounds easy enough to say that "in hyperthyroid conditions the gland should not be given"; but the question is not always as simple as it sounds. The size of the gland often gives no indication of its function. Indeed in a majority of thyroid strumæ of over two years' duration it is probably safe to say that the enlargement is more often an indication of under- than of over-function. The florid cases of early Graves' disease may be diagnosed across the room; but after lapse of time, tho the damaged heart con-

tinues irritable, and the cystic and fibrous gland is still large, and the exophthalmos has not receded, yet the patient has really become *hypothyroid*, and the diagnosis can hardly be made by clinical signs alone.

Laboratory helps are essential. The basal metabolic rate determination is often of value, but cannot alone be safely relied upon to clear up the diagnosis without supporting data from other sources. The metabolic rate is increased also in fevers, in the essential anemias, and in certain forms of pituitary disease. The excitement or terror of the patient at the ordeal of wearing the mask for ten minutes will sometimes run up the rate plus 30 per cent. or more. Then there are cases where a minus rate (even as much as minus 30 per cent. or more) only indicates that the general health of the patient is "down." One must also bear in mind the chance of leaks in the apparatus and mistakes in the mathematics—in short, one must mix all B. M. R. data carefully with a good proportion of brains and clinical experience.

The adrenalin test of E. Goetsch¹¹ still has its advocates. I have summed up the pros and cons elsewhere¹². My own complement-fixation test for thyroid toxins¹² in the blood, worked out for me by Mr. John Koopman, of the New York Department of Health, is, when positive, a contraindication for thyroid therapy. This test continues to give a good account of itself in all cases where toxic thyroidism is suspected, and is easily done, inexpensive, and when properly interpreted never misleads.

When the laboratory and clinical signs of hyperthyroidism are conflicting, the final resource of common sense is a careful diagnostic try-out of a few small doses of thyroid to see how soon the patient reacts. In hyperthyroidism aggravation of the ex-

isting symptoms will be noted in a few days, sometimes in a few hours.

Turning now to indications for thyroid therapy, the general note just made on contraindications will again apply. The symptoms of advanced cretinism or myxedema may be recognized by the "wayfaring man, tho a fool." But the diagnosis of the minor grades of hypothyroidism may be very perplexing. We are told that a rough, dry skin, a subnormal temperature, cold extremities, constipation, mental dulness, physical lassitude, "tired feeling," and similar signs and symptoms, call for thyroid; but every observant physician knows that any and even all of these conditions sometimes accompany diseases of an entirely different origin. Holt mentions the confusing fact that some hypothyroid children are mentally even brighter than their fellows. In order to reach a correct conclusion many cases must be carefully and repeatedly studied. When the patients are small children and babies, the stage of dentition should be mapped out, if necessary, with the help of the X-rays. The same resource will help to show the stage of development of the long bones. The B. M. R. determination cannot be made in the case of small children by reason of their uncontrollable restlessness, but with older children and with adults—within the limitations already set forth—it will give helpful indications. As a last resort thyroid may be tentatively given.

I have purposely omitted mentioning *obesity* as a sign of hypothyroidism, because it is often due to causes entirely unrelated to thyroid dyscrasia. Serious harm may result from the unconsidered effort to reduce fat by thyroid therapy. The treatment should never be tried without a B. M. R. test beforehand.

It should be noted, furthermore, that

there are certain cases of obstinate muscular rheumatism which, however carefully studied by modern methods, will not get permanently well without thyroid. And far more astonishing, but unfortunately far less frequent, is the benefit that results now and then from thyroid in the most difficult and disheartening cases of arthritis deformans. One should never omit to test the B. M. R. in these cases, in the hope that thyroid therapeutics may be of at least some temporary value.

We take up finally the details of bedside administration.

Having successfully made the diagnosis of cretinism, or myxedema, the young student recalls to himself the wonderful illustrations in the textbooks of the "befores" and "afters," and fancies that his own results will be even finer. But certainly so far as my own experience goes, these people are a very disappointing class of patients. Thyroid cannot be given, either by mouth or vein, in such a way as to imitate perfectly the performance of the patient's absent gland. He improves—he never gets well. Even when a cretin baby has for some years progressed so wonderfully that the ladies in his mother's parlor say they cannot distinguish him from a perfectly normal boy, the other boys at school will find him out the very day he is enrolled, and with the atrocious cruelty of the wolf pack they will make his life a bitter experience for him!

We must regretfully school ourselves to the conviction that our greatest successes will be among patients—all ages—with minor deficiencies. Here there is still some normal gland at work; and help from outside will act as a crutch for the limping organ till it can gather its normal activities together again and "go it alone."

Another fact must always be borne in

mind, that thyroid by mouth is not always well absorbed. Much of it, and unfortunately a variable amount from day to day, may pass out with the stool, unabsorbed, or somehow otherwise remain inert. There is not, then, any great advantage in dogmatically stating maximum and minimum doses. In a general way one-quarter grain to ten grains of the ordinary commercial extracts may be needed at a single dose. The special preparation which I have noted above, and which I very generally use, acts quickly and well in doses of one-quarter and one-half grain several times a day. It is rarely toxic in any dose. One patient of 55 years, recently in my care, misunderstood her directions, and instead of three took nine tablets per day, reporting two weeks later that she felt a great deal better.

One should, of course, keep a watchful eye upon the percentage of iodine, but of several commercial extracts of the same iodine content (at least so marked on the package), one may be much more toxic than another. Small doses frequently repeated are best, and the total quantity per day should be slowly increased till clinical effects begin to appear, or toxic symptoms are noted. Common toxic symptoms are nausea, diarrhea, fever, excitement, rapid pulse, insomnia, loss of weight, and a fine muscular tremor.

The dose of Kendall's thyroxin by mouth is .2 to .8 milligram. Of crystalline thyroxin by vein the dose is 1 to 10 milligrams. Thyroxin is marketed only by E. R. Squibb's Sons, under license of the University of Minnesota. The oral dose may be repeated several times a day, *p. r. n.* The intravenous injection should be given only every ten days or two weeks. The solution should be prepared *ex tempore* by dissolving the desired amount of crystal-

line material in a little sodium hydrate solution in a sterilized test tube, and standing the test tube in boiling water for five minutes. Full directions accompany the package. A package of 10 milligrams retails at \$3, but the expense is not so great as might appear when the long interval between doses is recalled. At the Mayo Clinic it is recommended to give oral thyroxin (each dose) with a little bicarbonate of soda, to avoid disturbance of digestion.

Whatever be the preparation used, the attending physician should remember that he is using an edged tool; each case requires accurate individual study.

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210 East 60th St.

The Doctor.—"Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried by a thousand embarrassments, and what are also important, Herculean cheerfulness and courage, so it is that he brings aid and cheer into sickrooms, and often enough tho not as often as he wishes, brings healing."—*Medical Standard*.

COMMON SENSE APPLIED TO MEDICINE.

BY

EDWARD SWALLOW,
Mount Vernon, N. Y.

Late Pharmacist to the Outpatient Department,
Bellevue Hospital, N. Y.

Common sense does not "drop down as the dew from heaven" and it is a mighty bad thing for the world that it does not so that it would impart to life generally its beneficent blood. Common sense is not so common as the term implies and in reality is a *rara avis*, a precious element, a flower which does not blossom in everyone's garden.

Common sense is the antibody called forth by the antigen experience, to meet the perplexities and problems of daily life. It is being produced in more or less degree from the time when intelligence begins to dawn upon the infant and has its inception in memory itself, hence the aphorisms "once bitten twice shy" and "the burnt child dreads the fire." It is brother to foresight, its mother is precaution and its father reason.

Without reason there is no common sense. Reasoning is the art of putting "two and two together," it fixes the relativity of things. It helps us determine that which is wise to attempt and what we should leave alone or drop. It is the light by which we guide ourselves thru the intricacies of life and when we are blessed in possessing more than our ordinary share it makes visible opportunities for both our own profit and advancement and that of the community, therefore the more a people are advanced in reasoning power the more progressive and dominant in world affairs they

naturally become. Coincident with the gift of thought is the power to transmit it into action and back of it all is the inborn urge to inquire into the nature of things around him which man has applied to the phenomena of nature and constitutes science.

By a similar method as cells are built up in the living organism so have the foundations of science been laid since the dawn of reason. Every thought that the human mind is capable of has the inherent power of creating other thoughts and considering the number of thousands of years humankind have existed, marvelous as our modern knowledge is as compared to that of two hundred years ago, we have not accomplished such wonderful things after all. That mankind remained in ignorance of the circulation of the blood for thousands of years, that even with the microscope at their command it took two or three hundreds of years to discover and isolate such disease germs as yellow fever, pneumonia, and that ages-old scourge of humanity, syphilis, which only comparatively has been thoroly studied and understood the past few years, that it is only recently that science and research has succeeded in producing a reliable remedial antisyphilitic agent as would seem to suggest that the reasoning powers of the countless numbers of those who have lived since the earliest of time were not developed very rapidly to say the best of it.

Undoubtedly the science of medicine has been hampered and its progress retarded by quacks and fakirs, who, tho ignorant themselves, knew enough to trade upon the superstitions and credulity of persons foolish enough to trust their lives and health in the hands of these unscrupulous sharks. One would think that any human being would have sufficient common sense and

reasoning power to call, when sick, upon those members of a recognized profession who a mere child knows are trained in all the scientific knowledge available for the cure and prevention of disease. Where a man's health is his most important asset, the only means by which he can do his work so that he can live and enjoy the fruits of his labor, it is a sad commentary upon the common sense and reasoning faculties when he is willing and even anxious to trust his most precious gift to the tender mercies of such unscientific pretenders as chiropractors and others of the same character. Judging by the increasing numbers of chiropractors and the different faith-healers under various high-sounding names, we must have quite a number of thousands of men and women in this land of free education and intense publicity who, while they are capable of figuring out that they would not ask a carpenter or bricklayer to cut their hair or mend their shoes, when it comes to a question of sickness their mental powers seem to weaken and in this respect they do not know enough to put two and two together except at least when one of these gentry asks for his fee.

In this respect these poor, deluded victims of these advertising quacks and fakirs seem to have a confusion of ideas and their judgment in the grave matters regarding their health lacks the clearness of the most immature understanding. These fakirs prosper by the advertising and publicity which is open to them in a free but short-sighted press, short-sighted, as in the end the whole country suffers from this keeping alive the superstitions and mercenary falsehoods by which these illiterate and ignorant quacks prosper and wax fat. In their ridiculous pretensions and hocus pocus the

honorable ethics of the medical profession are unknown, service to humanity in the highest degree in caring for the health and welfare of the people by scientific methods based upon absolute facts and confident therapeutics applied to the amelioration of the conditions of human life, these high motives are conspicuous by their absence in all these pretenders of the art of healing. These mercenary advertising sharks who have the audacity of deeming themselves competent to practice upon the bodies of our fellow citizens merely for the money they can extract from their gullible victims carry on their questionable and demoralizing business at the expense of the health of the persons who lack in a remarkable degree common sense in regard to their health, and also at the expense of the authentic medical profession which they are bold enough and allowed to challenge.

America has awakened to the importance of producing their own made drugs and remedial agents by the lesson taught our scientists early in the late World War and for the future our own American men of science will take care of our physical requirements in the way of medicines which they are well able by their acknowledged ability to do in a progressive manner. We shall rest confident in the future in that respect feeling that our bodily welfare is being looked after by our own brethren, and the next step to be taken in the interests of the nation at large should be a more aggressive attitude on the part of the medical profession towards these advertising quacks who constitute a menace to the lives and health of a great number of our fellow citizens who are not blessed in medical matters with ordinary common sense, and reason from the false and ignorant statements they read in quack literature.

A POSSIBLE UNSUSPECTED USE FOR YEAST.

BY

EDWARD WILLARD WATSON, M. D.,
Philadelphia, Pa.

Some time in the spring a patient came to me, a woman of fifty years of age, and a relation of a family I had known for many years; her mother, she said, had suffered for many years from diabetes and she had taken care of her and cared especially for her diet. Her mother died and now she herself had been told, by a doctor she had consulted, that she was a diabetic herself. She brought a specimen of urine which I examined and found, in spite of the experience I have had in practice and as a life insurance examiner for many years, the highest percentage of sugar. The reaction to Fehling's test was immediate, and startlingly so. She was, she told me, on a rigid diet, which she thoroly understood, as I found on questioning her. I had her return, at short intervals, but each specimen she brought gave the same reaction, tho her diet contained but scant starch or sugar. She complained of great weakness and asked me if she might take yeast cakes which some friend had recommended as a tonic, and I suggested that she take two a day.

Two weeks later she returned with a specimen, and said that the yeast seemed to make her feel brighter, and that she had less disturbance at night. On examining the urine she brought, to my great surprise, I found it to be quite free from sugar. A second and third specimen at short intervals gave the same results, so I advised her, as

I was going away for a summer vacation, to keep up the yeast, and if she seemed to relapse recommended her to another man for other examinations, or if she wished to write me. On my return I found she had improved in appearance, in the opinion of her friends, but had removed to a very distant part of the city, and I am still waiting for another specimen.

Having had on my list, for some four or five years a case of diabetes, in a single woman of forty, with specimens that on a special diet, tho not very strictly, nor carefully carried out, I fear, still showed much sugar. I put her on yeast cake, and in her case, all sugar disappeared.

As this patient went for the summer to the same place as I myself, I could keep her under steady observation. Her health seemed good, and she was allowed a liberal diet. On her return to the city the urine still showed no trace the yeast being steadily kept up. My field has been limited to these two cases but they have been of great interest. It seemed as tho the much vaunted "insulin" possibly might not be the only ferment of use in this disease. I thought it would be well to put on record this small experience with yeast, as others may be lead to try it, and thus prove it of value in diabetes. The use of yeast has increased very much of late as a routine addition to the diet and many have told me that as a result of its use they have gained in strength and appearance, tho never considering themselves very sick. In view of the recent discovery of "insulin", a ferment also, and one somewhat difficult to obtain as well as to employ, I thought these two cases worth reporting if only for their suggestive value.



NOT EVERY DOCTOR A SURGEON.

It is an unfortunate fact that there are physicians in considerable numbers who have never received the requisite training, but who are trying to do surgery, says Washburn in the Modern Hospital (February, 1923). To many of our people a hospital is a hospital and any doctor is a surgeon. A way must be found to protect these people. There should be some recognized mark of the competent surgeon and the trustees of all hospitals could then forbid others to operate in their institutions. The private commercial hospital would probably require state regulation.

AN ADDRESS IN MEMORY OF DR. WILLIAM M. LESZYNISKY.¹

BY

DR. ROBERT ABRAHAMS,
New York City.

The President and the Executive Committee of this Association have selected me to present to you an in memoriam of our late friend and fellow member, Dr. William M. Leszynsky.

is not a vain post-mortem exaggeration. Dr. Leszynsky enjoyed a wonderful faculty to make friends and keep them. This faculty was as innate in him as the perfume is in the rose or the whiteness in the lily. This faculty was the offspring of a naturally cheerful, sunny disposition. During a period of intimacy, covering a quarter of a century, I cannot recall one instance of irritation, impatience, ruffled temper, displeasure or any state approaching anger. His blue and penetrating eyes shed sweet-



DR. WILLIAM M. LESZYNISKY
Died March 3, 1923.

The discharge of this mission is a painful duty, but it carries a high privilege, for so great was our friend's popularity as a man, scholar, thinker, physician, that scores of volunteers could be found who would cheerfully and lovingly pay tribute to him, and, with better grace than I can. And this

ness and light, radiated affection and comradeship upon all and to all who shared his companionship and confidence.

Dr. Leszynsky possessed a strong sense of humor, which, however, he kept under cover, revealing it only when his assailing associates chafed him for the apparent lack of it. Under such provocation, there would occur a sudden rift in his affected blank

¹ Delivered before the New York Physicians' Association, October 24, 1923.

stare, lit up by a flash of humorous retort that would make his critics hold their peace forever.

Dr. Leszynsky was the personification of honesty, truth and integrity. The neglect of truth in the slightest way was to him an unmitigated and unforgivable intellectual crime. His associates knew it. They knew that when Leszynsky fought for a principle, that principle represented rigid, unbending justice and fairness.

Once at an interesting emergency, a friend asked him to stretch a point, and to ease his conscience and gain his support, his friend reminded him of the immortal Oliver Wendell Holmes who justifies a "white lie." Leszynsky's comment and reply were that in the realm of lies there is no color scheme, as all lies are black.

In matters of intellectual taste and pursuits our late lamented friend was passionately fond of vocal and instrumental music.

In his reading he was very eclectic. Not all that was born of print and press could appeal to his fastidious literary taste. He had little use for the novel except the few which were well-seasoned and deservedly honored by time. The essay, ancient and modern, historical, philosophical or scientific, *that* called for his approval and absorption.

Some summers ago he was asked what reading matter he intended to beguile his time with, while resting in the cooling shade of a spreading tree. His reply was: "Spencer's First Principles."

Comparatively few people were aware of the extent of his scholastic attainments. The man was extremely modest. He always felt that in the presence of well-read men he should be a listener instead of a participant, a most unjustifiable feeling. However, on many occasions he unobtrusively demonstrated the mastership of kaleidoscopic erudition.

Dr. Leszynsky was a very prolific writer. His contributions to medical literature count by the scores. They cover every phase of the specialty which he honorably and successfully practiced. His papers are marvels of brevity, beauty of diction and indubitable conviction.

Leszynsky abhorred the echo and re-echo of medical publications, a species of literature which contains no scintilla of novelty, originality or any other stimulating food for

the mind. Once in a while he clothed the old, but threadbare, in garments of modern cut and pattern with the sole object to convey a better understanding of a neglected principle in medicine. Leszynsky did a job like that, handsomely, gracefully, and epigrammatically. His style and diction which characterized his writing, equally characterized his private and public speaking.

The memorialist well remembers an evening of a session of the Executive Committee when our mourned friend rose to speak on a certain subject. A member of the Committee was spellbound in listening to him. He remarked to me, while the speaker was warming up to the occasion, that he would give a part of his life if he could speak as well, in tones as sweet and suave as Leszynsky did then in addressing the Committee. His voice and his words were tuneful, measured, impressive and enjoyable.

Strange as it may sound, yet true nevertheless, that during the long years of our friendship, he and I never discussed religion and politics. There is no question that he was an ardent American as he was born and bred in America. There is no question about his possession of all the civic virtues of an honest, upright and patriotic citizen. He loved his native city, he was proud of every brick and stone and pebble of its streets. He frequented the city's libraries, museums, colleges, parks, places of amusements and every other place or places of cultural and entertaining value.

His attitude towards the supernatural was, as I could gather from an occasional hint or allusion, that of an agnostic.

When Oliver Lodge was beating the tom-tom of spiritualism, I jokingly suggested to Leszynsky an agreement, that whoever dies first shall visit the other and tell him what is going on behind the curtain. He said that if he died first, I would have to live to eternity before he could gather up enough of his remains for the journey and the visit. So far he kept his word. I have not seen or heard from him yet. His belief in a future existence, if he had one, was a wish that was father to a thought, this and no more.

The branch of medicine, neurology, which Dr. Leszynsky chose for his life's work, compels its followers to be familiar with many diseases which are either immediately

or remotely related to it. The specialty is all embracing and all inclusive. In this light, Dr. Leszynsky was the ideal neurologist. His diagnosis of a neurologic patient represented the result of a detailed examination of a half a dozen organs of the body besides the nervous system. His procedure was slow and leisurely, sure and complete. I have known his opinion of a pathologic condition of the eye outweigh the opinion of acclaimed eye specialists. His vision of his specialty was as wide as the horizon and as luminous as the rays of the sun. He once facetiously remarked that he could never have chosen diseases of the ear as a specialty because the aurist's vision is limited to but a narrow canal.

Leszynsky was a born teacher. He was endowed with that enviable faculty of a born teacher, and that is to impart to others what he knew of a subject in a way that was at once simple and intelligible. And thus he was admired by students, internes and colleagues at the bedside or in the office.

He was an ideal consultant. He made a correct diagnosis, set the patient and family at ease, and cheerfully shared the moral responsibility of the attending physician. He was a psychologist as well as a neurologist.

Dr. Leszynsky hated cults. He was disgusted with the new and imported pathologic psychology, so-called psychoanalysis. He derided its followers who first pump their week-minded victims with "complexes" and then reduce them to mental masturbators. He was opposed to the introduction of sexual hygiene to children's playrooms.

Dr. William Leszynsky occupied an unique position in this Association. He was a charter member. He was president. He was never off the executive committee since the organization of this society. I need not tell you, fellow members, that he was a pillar of strength and a beacon of light these twenty years of the existence of the Association. We all remember his outcry against men who consent to become members, but who delay payment of dues.

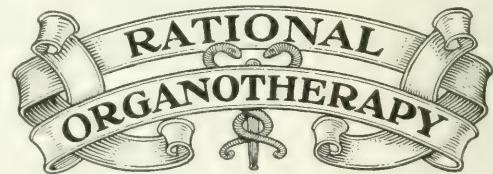
We all remember his outcry against members who came to the meetings when the session ended and the collation began. Finally, we all remember his clarion voice raised against collation members. Leszynsky abhorred the principle of collation without taxation.

Our mourned friend was a member of many lay, medical and fraternal organizations. He never played the figurehead. He was always an active member. To him a figurehead was equivalent to a dead head. Were I to enumerate all the organizations that he belonged to, or were I to name, even by title, all of his medical and scientific papers which his fertile brain turned out, I would grievously trespass on the time allotted to the rest of the program.

Dr. Leszynsky was born June 16, 1859, and died March 3, 1923.

Fellow members there is an old saying, that:

"After death, all are holy." I do not literally subscribe to it, however. Our departed colleague had his foibles and failings, he had his weaknesses and vanities, but take him all in all, Dr. Wm. M. Leszynsky was a man, every inch of him.



Thyroid Transplantation.—Kocher (*British Medical Journal*, September 29, 1923) prefers to use homotransplants taken from the hypertrophic gland of a severe but recent case of exophthalmic goiter, which is in a state of cellular hypertrophy and active new formation of vesicles. The best part of the gland to be taken is the upper pole or posterior part of the gland near the superior thyroid artery. It is essential that the pieces of gland shall be put into the receiver's body immediately after being cut out of the donor. Kocher transplants mostly into the upper end of the tibial bone, because it is very vascular and has a special affinity for thyroid tissue. However, he also transplants into the sheath between the fascia transversalis and peritoneum, or into the peritoneal cavity. But in the latter locality it is better to stitch the parietal peritoneum over the transplanted gland and not put the gland free into the peritoneal cavity. If the graft is to be successful, the healing of the wound must take place without rise of temperature or other postoperative reaction. Most important of all is the preoperative

and postoperative treatment. The patient must take thyroid some time before and several weeks after the transplantation, in order to decrease his actual want of thyroid, because if this is great, the transplanted gland tissue is simply eaten up by the organism. Failure to observe this need is the most common cause of failure of transplantation, especially in cases of total congenital absence of the gland.

Standardization of Parathyroid Preparations.—It has been shown that the parathyroid glands have two functions: They regulate calcium metabolism, and they are in some way able to prevent intoxication by guanidin and its derivatives. On this second property the standardization method proposed by Vines (*British Medical Journal*, September 29, 1923) is based. The principle is as follows: If an active parathyroid preparation is incubated at 37 C. with a known amount of guanidin in solution, the amount of guanidin reckoned as picrate at the end of the incubation period is found to be less than at the beginning of the test. Only one function of the glands is, therefore, tested, but there is reason to believe that if the preparation is deficient in this function it will also be deficient in the other. The method of procedure is described in detail.

Relation to Life of Suprarenals.—The following facts are definitely established by Houssay and Lewis (*American Journal of Physiology*, May, 1923): (1) Double suprarectomy is fatal in most species, among them the dog. (2) Removal of all chromophil tissue contained in these glands is perfectly harmless. (3) Extirpation of the interrenal body (equivalent of cortex in *Elasmobranchs*) is followed by death. The authors therefore conclude that, (1) the cortex is indispensable to life; it maintains its vital functions without the cooperation of the medulla; (2) the chromophil tissue of the suprarenals is not necessary to life or to normal functions. This does not mean that chromophil tissue is not indispensable to life. In these experiments only a part of this tissue is removed, and it must be remembered that relatively a greater portion

of medullary tissue than of cortical tissue remains in the body after suprarectomy. If chromophil tissue has vital functions, the extracapsular portion is sufficient to maintain them, but up to now there is no evidence that these vital functions exist.

The Genesis of Ovarian Tuberculosis.—

Wertheimer states in the *Arch. f. Gynaek* (March 17, 1923) that he has examined serial sections of both ovaries in 18 patients whose primary tuberculosis infection appeared to be pulmonary and who were found at autopsy to have generalized hematogenous infection as shown by the presence of miliary tubercles in certain viscera. The patients ranged in age from 1 to 53 years. Ovarian tuberculosis was found in 7; 3 showed tuberculous peritonitis and tuberculous disease of the Fallopian tubes, so that the ovary had been infected by direct extension, but in 4 patients one or both ovaries showed the presence of miliary tubercles without presenting macroscopic evidence of infection, and in the absence of local peritoneal or of tubal or uterine tuberculosis. Hematogenous ovarian infection was noticeably less common in these cases than that of spleen, liver, adrenals, or the cerebral meninges.

Some Facts Concerning the Adrenals.—

Hyde, in his paper in the *Eclectic Medical Journal* (October, 1923), calls attention to the fact that, the adrenal medulla is of sympathetic nerve origin and structure, hence auto-operative. It has large blood and nerve supply; for instance, three arteries, but only one vein; factories of secretion, but ductless, so that the product must find exit thru the blood-vessels, possibly somewhat by lymph channels. And remember that the main bodies are reinforced by colonies or rests of adrenal tissue in other glandular areas, as the testes, ovaries, sympathetic ganglia and along some vessel walls—the outfields, if you please, in working the game of oxydation.

The first finding, then is: That adrenal secretion has marked affinity for oxygen and goes directly to pulmonary air cells via the heart.

Second: Reaching the lung alveoli, the adrenal secretion absorbs oxygen, eliminates carbon dioxide, and becomes a constituent of the hemoglobin of red corpuscles.

Third: These oxygen-loaded corpuscles yield to the blood plasma their so-called blood droplets or platelets that carry this oxygenated hemoglobin.

Fourth: That this albuminous, oxygenized, adrenalized hemoglobin is distributed by the blood plasma to all tissue of the body as an oxygenizing agent, and that their real power unit is a new discovery by Sajous, which he has named adrenoxydase, the agent that sustains tissue oxydation and metabolism. With these results normal, we have normal temperature and health. Over-work, over-oxygenization, too much energy, too much waste, too much chemistry, too much ionization, means too much heat or fever. Under-production means incomplete oxygenization, accumulation of waste, autoxemia of cells and plasma content, not enough heat, hence cold hands and feet, chilliness, shallow respiration, weak heart stroke, torpid liver and bowels, poor appetite, myalgias; fine soil for low germ life, such as staphylococcus, pus germs, diphtheria germs, gouty rheumatic attacks, etc. The general deduction, then, is that the adrenal function is to produce and sustain pulmonary and tissue respiration, give tone to the vascular and nervous systems, and carry on general metabolism and nutrition.

The Possible Relation of Tonsillectomy to Impairment of the Sexual Function.—Copeland (*Western Med. Review*, November, 1923) believes that tonsillitis is connected with a rheumatic diathesis which develops during the gormandizing period of childhood and youth, and later, from similar or other causes, manifests itself in rheumatism or gout. The treatment of the one he maintains is applicable to the other. Give salicylate of sodium and colchicum. In young girls tonsillitis is often complicated with some menstrual disturbance. In these cases give guaiacum.

On October 6, 1922, Charles E. Page, of Boston, Mass., wrote that "Dr. John N. Mackenzie, a distinguished physician, a throat specialist and professor in Johns Hopkins University, in an address declared

that the operation on the tonsils is 'a surgical insanity' and gave his reasons in detail, the chief point being that the tonsils are very important and useful organs and there is no more occasion for the removal of an inflamed tonsil than an inflamed eye."

Tonsillitis is an affection peculiar to childhood and adolescence and frequently to newly married people and generally in time vanishes, as it were, of its own volition. If, however, pus supervenes and enlargement persists it should be lanced and drained as one would an abscess of any other part of the body, but leave intact as much as possible of the stroma on which depends the secretion and function of the glands and which is undoubtedly connected with the procreation of the species. Copeland states that he is aware that this assertion is contrary to the opinion and practice of physicians generally, but let them watch the effects of tonsillotomy and they will or should cease to emasculate the innocent, helpless and confiding children and will teach parents the sterilizing result of this deleterious practice.

The Pineal Body.—As an editorial writer in the *Jour. A. M. A.* (November 17, 1923), well says even the most enthusiastic endocrinologist must still admit that the secrets of the physiologic functions of the pineal body, or epiphysis cerebri, have not yet been clearly revealed. The earlier studies on the effects of extracts of the pineal substance were frankly disappointing. There was nothing essentially significant in the fact that a fall of blood-pressure could be produced by intravenous injections; for depressor substances seem to be widely distributed, and the fact that a tissue yields potent substances to the chemist's manipulation by no means proves that normally they have a physiologic function or pathologic significance. The pineal body seems to reach its greatest development in man at about the seventh year. After this, and particularly after puberty, it undergoes a process of involution during which the glandular structure gradually disappears and its place is taken by fibrous tissue. This fact suggests, even if in an indirect way, that the pineal may have some relation to the developmental changes that end in the sexual maturity of the individual.

There are corroboratory evidences, tho few in number, from human clinical experience which are somewhat in harmony with the assumption that the pineal body may exercise its function in repressing premature development of the organs of generation in the female as well as in the male. The subject deserves careful consideration at the hands of those who may have opportunities to make more extensive necropsy observations. Incidentally, the exhibition of retarding influences, if they prove to be such, in connection with important biologic activities, affords a further illustration of the little appreciated rôle of inhibition in physiology—a phenomenon to which Meltzer directed attention in a forceful way. Tho it is rarely suspected, the organism has more than one brake to curb the speed of its physiologic machinery.



BY-WAYS AND HIGHWAYS

The Doctor and the Deadly Automobile.—One frequently sees both in the medical and lay press from time to time, lists stating the causes of death among physicians. The *Journal of the American Medical Association* publishes such statistical information every year, and in each issue gives a roster of deaths but wherein the cause is either not known or, at least, is not stated.

There is a sort of grim joke which is always going the rounds to the effect that doctors usually die of the specialty to which their lives have been devoted—for instance, the abdominal surgeon succumbs to appendicitis, the otologist to mastoiditis, the internist to cerebral hemorrhage or some other arterial disease, etc. No one, of course, means to be serious about this, for there can be little or no relation of cause and effect, but it is in the human mind to be looking always for generalities of the glittering variety, and this whim is sometimes satisfied by curious coincidences.

As for the death-dealing automobile, however, there is nothing but fact to account for the untimely demise of many of our

best-loved confrères. In the good old days of slow transit by horse, or "horse and buggy," accidents were few because the world moved more steadily, and the wild whirl of high-powered motor cars was a thing unknown, but in the present mad rush for time-saving devices of all kinds we have "speeded up" to what seems to be the last notch to our own undoing. Any new invention, no matter how great a boon it seems to be to humanity, is never an unmixed blessing—there is always some undesirable element about it. Undoubtedly the motor car has brought joy and comfort to thousands, but it makes the work of the highway robber and cutthroat, and has many times been accused of "undermining the morals of the young," a curse which the ancient Greeks knew and sought to destroy.

The writer was greatly interested in a recent partial list of death claims sent out to physicians by a casualty association solely with the idea of getting new business and not for purposes of necrology, but it furnishes such a sad commentary on the mad haste and waste of the present day that it offers food for thought and reflection. Death claims to doctors' estates for from \$5,000 to \$10,000 were paid by this company in at least 47 instances as set down in the list, but there must have been more or the word "partial" would not have been used.

Of the 47 total reported, twenty-seven were killed while handling their own car! Many of the notations run as follows: "Automobile struck by passenger train." "Auto collided with truck." "Drowned when car ran into river." "Automobile collision." "Automobile collided with electric car." "Automobile capsized while on a vacation trip to Yellowstone Park." "Ford Sedan struck by switch engine." "Car skidded and turned over on sandy road." "Thrown from automobile and instantly killed." "Tire blew out, car overturned." And so it goes thruout the list, the report making it appear that something done by the auto caused the death, when, as a matter of fact, something was done to the auto by a human hand which caused the fatality. One often hears that "Automobiles are dangerous." Not at all if we study the relationships of cause and effect—it is the driver who is dangerous, not the car in most instances. A certain percentage of de-

fective steering gears or imperfect tires may account for some accidents, but usually such defects would have been innocuous had the pace been reasonable instead of furious. Of course, sandy and slippery roads are "acts of God" as the lawyers and certain insurance policies phrase it, but the brain of man is and always has been a match for such natural imperfections, and the experience of all of us, based either on personal observation or the testimony of others, should be sufficient to make driving safe. Probably the "hurry call" is responsible for disregarding the factor of safety in many instances, but, surely, physicians of experience know that many such calls are merely a subterfuge to get the doctor quickly and thus relieve an anxious state of mind rather than pain and protracted suffering.

Skidding on wet or oily pavements is dangerous. Such surfaces are treacherous and sometimes deceptive to the eye, but more commonly the doctor feels that it would take too much time to put on the tire chains, so he takes the chance and pays the penalty. If one could be sure of brakes, gears and the rest of the elements upon which one depends for the control of a machine, and there seems to be no reason why careful inspection and examination cannot make for such sureness, the number of accidents should be reduced to almost nil, if the mania for speed could also be eliminated.

As for the dangerous "other fellow." He must be counted in of course. Three deaths of the 47 above mentioned were accidents to physicians who, for the time being, were pedestrians and were at the mercy of careless drivers. One doctor was run down by an auto while crossing a street. Whether he looked both ways is not stated. One was killed by an auto driven by an intoxicated chauffeur, and still another was bowled over by a reckless driver just as he stepped down from a street car. Even so, with ordinary precautions, some of these sad accidents might have been avoided. And just here, one may say a word about "the right-hand turn." In a great city like New York, there is no doubt that many persons are struck from the side or rear by a car which has changed its direction. You watch the traffic and it is apparently moving in the straight-line direction in which you wish to go; therefore, you cross the street with it

parallel to your direction. Then suddenly a car in the line decides to make a right-angle turn into a side street, the street which you are crossing. Likely as not a traffic officer has given the sign to go, and in an instant you are bowled over. This turn should be abolished, for there is plenty of time to make it when the cross traffic is again resumed. Quite often the swerve is made at high speed in order to make up time lost by the traffic hold-up, or to get out of the way of the surging stream of cars. No warning note is sounded and the foot traveler is doomed.

Of 14 other accidental deaths for which insurance money was paid, most were not in line with the exigencies of medical or surgical practice. There were several falls on the ice or hard-wood floors which resulted in skull fracture and death. Septic infections from needle pricks while operating, etc., which used to be much more common than now for some reason, account for very few deaths in the list under discussion, perhaps because the danger is so well recognized that immediate steps are taken to prevent infection as soon as the puncture is felt.

The conclusion, therefore, is that doctors are in very great danger from street accidents while driving their cars, and that many of these accidents are fatal. The corollary from all this is not to stop driving, but to drive slowly whenever common sense dictates the necessity, inspect your car every day to make sure that the mechanism is perfect, and not to tempt Fate because you think that you have always lead a charmed life. One indiscretion may bring untold grief to your family, physical as well as mental suffering because of the loss of your support, and the loss of your services to a community which respects and perhaps even loves you. *Drive slowly and do not take unnecessary chances!*

The Multiplying Stethoscope.—A recent announcement of Dr. Richard Cabot, of Boston, stating that he teaches a room full of his students by means of a multiplying stethoscope has stirred up a certain amount of excitement at Purdue University, Indiana.

Something over a year ago Prof. R. B.

Abbott, who is head of the Physics Laboratory at Purdue, demonstrated a similar instrument to the faculty of the medical school and ultimately to the student body. The room in which he tried out his apparatus seats 250 students. Upon applying his apparatus to a man's heart the heart sounds were distinctly heard by every student in the room without leaving his seat. Prof. Abbott made phonographic records of the heart sounds with his instrument. These he then broadcasted by radio. It is, therefore, simply a question of amplification as to how far the sounds can be sent, for with proper amplification it is possible that the heart-beat could be heard in Boston and San Francisco simultaneously!

This instrument of Prof. Abbott's is being used in the Universities of Iowa, Illinois and Michigan. The only patented part is the transmitter. The rest of the apparatus can be made up in any laboratory. Friends of Prof. Abbott think that this new instrument will revolutionize the teaching of chest sounds to medical students.

An Epoch-making Operation.—Valvotomy by the transcardiac route for the relief of mitral stenosis has recently been successfully performed at the Peter Bent Brigham Hospital in Boston. For the first time in the history of medicine, a human being has undergone this operation and recovered.

The patient was a little girl 12 years old, who, for a long time had suffered from shortness of breath, bloody sputum, cough and other symptoms which had confined her to bed ever since an attack of "flu" in 1918. She could not lie flat in bed but had to sit up to breathe, and her heart was so large that the ribs protruded. In general, the clinical picture was one of mitral stenosis. There was shortness of breath and hemoptysis.

Operation was performed during the visit of Professor Wenckebach of Vienna who was very enthusiastic in his approval of the courage and skill of the two young surgeons, Dr. Elliott C. Cutler and Dr. S. A. Levine of the Surgical Clinic, and the Laboratory of Surgical Research of the Harvard Medical School.

At 7 in the morning the patient was given a dose of morphine and atropine. At 8, one hour later, she was brought to the operating room and X-ray pictures were taken to show the outline of the heart, then ether was administered by the intratracheal route. Three-quarters of an hour later, the operation was begun. After exposing the heart thru an appropriate incision, the fingers of the surgeon's left hand were passed behind the sternum and the pleura was separated from the chest wall. The pericardium was then split in front almost up to the base of the heart thus permitting the bottom of the wound to open widely and exposing the entire heart to view and manipulation. The pulse which had been 180 now dropped to 120, and about ten drops of adrenalin solution was allowed to drip over the heart, followed by saline. At once the heart responded by vigorous and full contractions, and this moment was seized as the most favorable one to operate. Rolling the heart out of its bed, a very fine knife was plunged into the left ventricle about one inch from the apex, and pushed upwards about two and one-half inches until it encountered the contracted valve. It was then turned so as to cut thru the valve leaflet, and the knife withdrawn. Stitches had already been placed, and were tied promptly so that little or no bleeding took place. The operation was over at 10, the patient seemed in good condition and was conscious in less than an hour. Her faith and affection for her nurses comforted and helped her toward ultimate recovery, and on the fourth day following operation she was brought into the operating amphitheatre and presented to a group of physicians who had assembled to see the result. On the seventh day all stitches and dressings were removed and the wound showed complete healing.

Drs. Cutler and Levine conclude that this experience proves that surgical intervention in mitral stenosis bears no special risk to life and should give further courage to other surgeons who will wish to try to alleviate a condition for which there is now no medical treatment and only a fatal prognosis. The method was worked out only after years of laboratory experimentation on animals, and according to Dr. Harvey Cushing, is epoch-making in its significance.



Dyspeptic Pain.—According to Dr. Ramond, quoted by the *Medical Press and Circular* (August 1, 1923), gastric pain may assume the form of a simple sensation of weight or of distension occurring after meals and corresponding to simple aérophagia or pyloric spasm; or there may be actual pain with a burning sensation or cramp. The burning sensation is due to the contact of the gastric juice with an irritated mucous membrane. The object of treatment is to improve the state of the mucous membrane by means of an appropriate diet and suitable medication. The diet is a well-known one, and as regards medicinal treatment, this consists in prescribing a protective gastric dressing morning and evening in the shape of some inert powder or gelatine preparation, to which is added a full teaspoonful of bismuth carbonate or talcum powder. In addition, alkalines should be given in order to neutralize the gastric juice when the pain supervenes. A common and useful formula is the following:

Carbonate of lime, one gram; bicarbonate of soda, fifty centigrams; magnesia, twenty-five centigrams, for one powder.

Cramp is due to peristaltic contracture arrested by pyloric stenosis. Antispasmodic medication is indicated and bromides may give excellent results, but in some cases they produce irritation of the mucous membrane. Ramond prefers belladonna, combined with conina hydrobromate.

Atropine sulphate, half a milligram; conina hydrobromate, two milligrams; extract of henbane, one centigram; valerian powder, five centigrams; for one pill. One or two each day (not to be continued for too long a period).

In most cases patients suffer from both the burning sensation and cramp, and both treatments should then be combined.

Treatment of Severe Typhoid Fever by Transfusion of Artificially Immunized Blood.—L. Neuman (*Amer. Journ. of the Med. Sciences*, Vol. clxiv, No. 5, p. 690) describes this treatment in two cases where the patients were very ill. In the first 600 c. c. of normal blood were transfused after a large intestinal hemorrhage on the twentieth day, and produced great improvement. A further 700 c. c. were given on the thirtieth day when the patient was showing signs of collapse. A third injection of 700 c. c. was given on the thirty-third day. The general condition improved somewhat, but toxemia was still well marked. On the fortieth day 500 c. c. were given from a person im-

munized by a typhoid vaccine a short time before. The symptoms of severe toxemia rapidly abated, and the patient made a good recovery. In the second case the donor of blood was immunized for the occasion. After 650 c. c. of this blood there was great improvement, and later a good recovery. The writer comments that the value of transfusion in typhoid fever is clearly demonstrated. There is no dangerous rise of blood-pressure nor increased tendency to bleeding.

Treatment of Whooping-Cough.—Of all the spasmodic diseases, none is more distressing than whooping-cough, says A. Lapthorn Smith (*The Prescriber*, 1923), whether in an adult or in an infant patient, and of all the remedies for this disease none can be compared with acetanilid. The author states he has never seen this application of it in print, altho he first employed it for his own six-year-old son thirty years ago. The spasms of coughing were so severe that in desperation he gave him a few small doses of acetanilid, with magical results. Since then, especially during the last few years, Smith has given it to a great many cases of pertussis, and always with the greatest satisfaction.

Digestive Function in Pulmonary Tuberculosis.—Hislop claims (*Indian Medical Gazette*, July, 1923) that the usual effect of tuberculosis on the digestive function is one of inhibition, the quality and quantity of the gastric secretion depending on (1) the degree of inhibition, and (2) the quality and quantity of the secretion prior to the tuberculous onset. Indigestion in hypochlorhydria is never severe and readily yields to treatment directed toward stimulation of gastric secretion. Hunger pain coming on two hours or more after a meal is the predominant symptom, which is temporarily relieved by the ingestion of food. The second type is the more common. The symptoms are: flatulence, pain, nausea and vomiting. The main feature is intolerance of fats alone or in a mixed diet. Soups are often avoided because of the fat, and fat is cut off bacon unless it be crisp, while milk or milk and egg is felt to increase the symptoms. Cod-liver oil and malt and milk are disliked by the majority of tuberculous subjects, and almost universally when dyspepsia is marked but numbers take both even when they disagree, simply on account of medical advice. The treatment consists in keeping the mouth and teeth clean by an acid mouth wash used each night and morning. Diluted nitrohydrochloric acid should be given in doses of from 10 to 30 minims (0.7 to 2 c. c.) before or during each meal. Aperients should be taken when needed. No dyspeptic patient should be required to take an excessive diet. Milk should be given in moderation, and the addition of

sodium citrate will often overcome difficulty in the assimilation of moderate or reduced amounts. Any mixture of proteins with fats in a liquid form should be avoided. Meats are better cooked in their own juices; milk should not be given with meals at which meat is served; fish should not be fried in oils; the fat with meat, for example bacon, should be crisped. Carbohydrates should be served at meat meals.

Treatment of Heart Disease.—1. The newer knowledge of the mechanisms of the cardiac rhythm, particularly as disclosed by researches with the electrocardiograph and polygraph, Lewison (*Jour. of the Amer. Med. Assn.*, March 24, 1923) says, enables us to treat heart conditions more efficiently.

2. Cardiac failure is usually associated with auricular fibrillation, which, when present, responds very satisfactorily to digitalis medication. Proper dosage of digitalis is necessary. The method of large dosage is advocated.

3. Quinidin has proved successful in more than 50 per cent. of the cases of auricular fibrillation in restoring the normal rhythm.

4. The importance of infection as a factor in cardiac failure is too frequently overlooked, and the generally accepted theory of back pressure and cardiac strain should be abandoned in most cases.

5. Functional cardiac disturbances must be differentiated from serious organic disease, and treated accordingly.

6. Effort syndrome is usually not a cardiac disease, and the true diagnosis should be determined for its successful treatment.

Mizell Discussions.—The action and effect of the *bacillus acidophilus* (*Southern Med. Jour.*, November, 1923) emphasize the fact that the work of Rettger and Choplin on the intestinal flora has opened up a large field for investigation and we may expect some means of using the *bacillus acidophilus* to fill a valuable place in intestinal therapy.

Finally, subject to the limitations of this small clinical study the following conclusions appear permissible:

(1) Relief from chronic intestinal toxemia, putrefactive type, and stasis, even in the presence of intestinal adhesions, has been secured while feeding *bacillus acidophilus* milk culture in conjunction with a general diet.

(2) Chronic ileo-colon and colon stasis of undetermined origin as well as secondary to intestinal adhesions may be relieved by feeding *bacillus acidophilus* milk.

(3) When results are not so secured additional measures of a non-irritating character directed to the relief of the constipation and some modification of diet may render the treatment effectual.



The Menace of Smallpox.—While the increase in the virulence of smallpox has been confined largely to a group of western states, this has an important bearing on the safety of the rest of the population in the United States and Canada, states a writer in the *Statistical Bulletin of the Metropolitan Life Insurance Co.* (June, 1923), for there is no certainty that this virulent type of the disease will not spread to populations in the eastern section of the country, especially to those states where by reason of anti-vaccination propaganda, there has been a steady rise in the number of unprotected persons in the population. Among such populations, we may again have an experience similar to that which occurred in Montreal in 1885-1886. Following the introduction of one case of smallpox from Chicago, the disease spread thru the city and within nine months, thousands of cases occurred and 3,164 persons died. Vaccination, performed under conditions prescribed by the United States Public Health Service, and the state, provincial, and municipal departments of health, is the only certain protection against the severe type of the disease which seems now to have obtained a firm foothold in certain of our American states.

Is There a Lack in Practicing Physicians?—There is not a scarcity of physicians today, claims Dodson (*Jour. of the Amer. Med. Assn.*, January 6, 1923), the trouble is in the distribution. Statistics gathered from a reliable source show that the cities are being over-crowded and the country robbed of its legitimate quota of physicians, and especially is it true regarding the recent graduates and younger members of the profession. What are the appreciable causes of such condition? The schools of the last few years have been dominated by teachers who have attempted to turn out specialties of their own type rather than doctors versed in the broad general principles, viewing their patients as members of human society. The medical education of the recent graduate has been largely influenced by large hospitals equipped with ultra-scientific laboratories and instrumental methods of physical and functional diagnosis. He really feels that medicine cannot be practiced elsewhere than in the well-equipped hospital. He should be inspired by the report of the reference committee on medical education, at the last meeting of the American Medical Association, which states that no less than eighty to ninety per cent. of all illness can be cared for by the general practitioner and ninety per cent. of the cases can be cared for in their private homes. Medical education, in its essence, is to get the

young physician to serve his fellow citizens. The physician is the middle man who delivers to an individual patient the result of an accumulated medical lore. His effectiveness is not so much of how great his knowledge and skill is, as how much he makes applicable to his particular patient wherever he may be located.

Investigations on the Limitations of Human Hearing.—Prof. Martin Gildemeister has been conducting a new series of researches on various questions pertaining to hearing (*Eclectic Medical Journal*, October, 1923): What are the lowest and what are the highest tones that a person with normal hearing is able to hear? At what time of day, what time of the year and at what time of life does one hear best? Does one hear better with the right or with the left ear? Does one hear better by air or by bone conduction? The former researches to determine the upper limitation of human hearing yielded results varying between 15,000 and 50,000 vibrations per second. This inaccuracy in the findings was due to the fact that an unsuitable instrument, the so-called Galton whistle, had been used for the production of tones. Gildemeister has now constructed entirely new apparatus for his researches, thru which much more accurate results have been secured. His experiments were carried out on fifty-one experimental subjects, comprising pupils, students, girls, teachers, officials, merchants, farmers, and workmen of various kinds. All these persons, whose ages ranged from six to forty-seven, were possessed of normal hearing, as was established by careful preliminary examination.

The upper limit of hearing for the youngest (6-year-old) pupil, for air and bone conduction to the right ear, was at 19,800 tone vibrations per second; for air conduction to the left ear, 18,700 vibrations; for bone conduction to the left ear, 19,800 vibrations. In the case of a 9-year-old pupil, hearing ceased for air conduction to the right ear at 20,400 vibrations; for bone conduction at 19,200 vibrations; for the left ear at 20,100 and 20,000, respectively. In an 18-year-old pupil, the best of all those examined, the upper limit for the right ear was at 20,800 and 18,800, respectively; for the left ear, at 20,400 and 19,100. In a 20-year-old student, the upper limit of hearing for the right ear was at 17,900 and 17,100 vibrations per second; for the left ear at 14,900 and 16,300, respectively; in a 33-year-old teacher, for the right ear, at 17,900 and 17,500, respectively; for the left ear, at 17,990 and 17,700, respectively; in a 44-year-old merchant, for the right ear, at 12,700 and 10,300, respectively; for the left ear, at 12,900 and 7,400, respectively.

A number of interesting facts are deducible from the results of Gildemeister's tests on hearing. It is comparatively rare for the hearing of the right and left ears to be equally good. There is often great difference in hearing between the two ears, and the findings during several tests on different days remain the

same. But there was no evidence that the right or left ear, in general, was essentially superior with respect to hearing. Age, however, plays a big part in the matter of hearing. Children and young persons up to twenty years of age hear best the high tones. Even in children, a slow but gradual falling off in hearing can be noted, and from twenty up to the middle of the fourth decade the diminution becomes more marked. Up to the middle of the fifth decade, then, the hearing remains approximately at the same level, and then sinks rather rapidly up to old age. The diminution in hearing from age six to forty-seven is represented, on the average, by 7,000 vibrations—that is, it sags from 20,000 to 13,000 vibrations. There is not the slightest evidence for the heretofore assumption that hearing thru bone conduction is keener and better than thru air conduction. Of ninety experiments, hearing of the highest tones was better in fifty-two cases with air conduction; in eleven cases it was equally good, and only in twenty-seven cases was hearing better with bone conduction than air conduction.

The variations in hearing that are brought about by the changes from day to day in physical well-being may be represented by 200 vibrations at the most. On the other hand, occupation and practice play a certain part, for it has been shown that persons who telephone a great deal often present much more than average upper limits of hearing, whereas the limits of hearing in miners and smiths, who, thru the nature of their calling, are constantly exposed to loud noises, were much reduced.



Automobile Insurance for the Doctor.—Doctor, is your car insured? asks H. S. Baketel in *Medical Economics* for November, 1923.

If not, he continues, you are flying in the face of Providence.

Whether it cost \$300 or \$6,000, no car should be driven unless covered by insurance. Far greater are the hazards accompanying the use of the automobile today than of the other ordinary usages of life.

A man may feel that because of his good driving, lack of desire to speed, etc., insurance is not necessary. But the fact always remains that he can never be sure about the other fellow. In short, it is impossible for him to divine what is in the other person's mind and what may happen as a result.

A recent collision loss in Newark, N. J., will illustrate the point. The chauffeur of a truck driving east, followed closely by a pleasure car, failed to notify the driver of the latter of his intention to turn north. To avoid the im-

minent collision, the pleasure car turned with the truck and missed it but crashed into a second truck driving west.

Investigation disclosed that the insurance on the pleasure car, which was a total loss, was later sold for junk, had been allowed to lapse a month earlier. The result was that this owner was out of pocket to the extent of one car and in addition was compelled to stand certain damages which the truck owner did not have covered, such as loss of use and of time, expense of putting into service a substitute truck, etc.

In this instance, if the pleasure car owner had carried Collision Coverage, he would have been reimbursed for the damage to his car. Had he been covered by Property Damage, he would not have been forced to stand the truck owner's loss.

Following are the forms of automobile insurance:

- 1.—Fire and Transportation.
- 2.—Theft.
- 3.—Collision.
- 4.—Property Damage.
- 5.—Liability.

As a general thing, Fire, Transportation and Theft are written together on one policy, altho it is possible to get coverage against the fire hazard alone. Fire and Theft, as it is commonly called, is now written only on the so-called Non-Valued form. This means merely that in the event of loss, the market value of the car at the time of the loss is made the basis of adjustment.

Do You Know: That advancing your gas when trying to park your car, in or out, will obviate stalling your engine?

That going into second gear does away with stalling your engine crossing car tracks, or railroad crossings? Most drivers approach crossings slowly and when attempting to go along stall their engines on the tracks. Needless to say, stalling on a railroad crossing is unhealthy. Go into second and avoid disaster.

Helpful Hints.—Don't forget that insurance heals many a hurt, bodily and to the car. Forearmed helps many a man and saves time that would otherwise be costly.

It is always a good plan, when in or about a garage at a time the mechanic is busy making repairs, to watch and learn simple repairs. Making your own simple repairs, saves much time and money.

Using oil in your car, means much more than just "putting in any old oil." The best of oil obtainable is the cheapest in the long run. The frequency with which oil should be renewed depends on the weather and running of the car. A good general rule would be to change your oil about every 600 miles of running during the summer and about every 400 miles during the cold weather. One must remember, that the best of fuel nowadays is none too good and that there is bound to be some leakage into

the oil, causing it to thin out. Also dirt and dust are constantly being sucked into the crank case and that together with oil in a hot engine causes carbon. Remember, that changing oil at proper time reduces carbon and wear to your cylinders and bearings, so that even if oil is changed every 500 miles on an average, you will add considerable percentage to the life of your car and less expense in overhauling.

When greasing your car, universals, shackles, steering gear, bearings, bushings, etc., don't merely *add* grease. You are not properly greasing your car until some of the old grease is forced out.

Don't spill oil around oil holes, engine or pan. Cars thus neglected are great fire hazards.

Do not buy your new car on speculation. Nowadays, the time payment plan is an easy way out for the average man wanting a car. The easy payment plan induces him to buy a new car rather than a good, second-hand car. Lack of knowledge on the part of the buyer as to practical design of the car wanted and to be able to tell the difference between the different makes, pretty colors and advertising, spells disaster to the average buyer within a short time. The man driving his own car should make a point to know as much as possible about his own car, and pick his car as he would any other necessity of life.

Good judgment and practical knowledge should be the only guides when buying new cars nowadays and do not forget that a little foresight in buying your car from a reliable firm or dealer, will increase the resale value later on, thus cutting the actual cost, providing good care is given during its daily life.

NEWS NOTES & ANNOUNCEMENTS

Honors to Dr. Crile.—In recognition of his service in France with the Lakeside Hospital unit, Dr. George W. Crile, of Cleveland, has been decorated by the French Government with the Cross of the Legion of Honor. The ceremony took place at Lakeside Hospital, October 8, under direction of General A. Dumont, military attaché of the French legation in Washington.

Dr. Crile was awarded the distinguished service cross in May, 1919, the citation relating that his researches and discoveries were the means of saving the lives of many wounded soldiers.

A New Health Magazine.—In an attractive new dress, in a more compact and readable form, with its value enhanced by the dignity of print, the most recent number of *Venereal Disease Information*, a monthly publication issued by the United States Public Health Serv-

ice at Washington, has just come from the press.

The subscription price of this new periodical is 50 cents per year, payable to the Superintendent of Documents, Government Printing Office, Washington, D. C.

A Business Medical Journal.—Much interest has been taken in the appearance of *Medical Economics*, a new journal devoted to the economic problems of medical practice. It is splendidly printed, and if the October and November issues are any criterion of future numbers, it is bound to be a great success, for it treats just the topics that are greatly interesting medical men at the present time. *Medical Economics* is edited by Dr. H. S. Baketel, which assures its high professional character.

Accident Mortality.—Fatal accidents accounted for 76,300 deaths in the United States during 1922, according to a recent report of the National Safety Council. This represents an increase of 2,000 over the preceding year.

Within the past decade, the number of fatal accidents each year has never fallen below 70,000.

The automobile is responsible for the largest number of such accidents, it is pointed out. An average of 200 persons were killed each day last year by this type of vehicle, while railway coaches are considered the safest places in America.

Commenting upon this, the report of the Safety Council says that "No greater achievement has been made in welfare work than that made by railroads in handling the accident situation. They have made railroad operation so safe that a person actually is in less danger traveling on the modern roads than he is walking in the street."

There is a new type of "fatal accident" which the *Cincinnati Enquirer* would like to see included in this compilation. It is the "poisonous liquor list."

"What is not reported by the committee," this editorial states, "is the poisonous liquor casualty list, tho it very properly might be included in accident statistics. In the last ten months 2,000 persons have died in this country, victims of the 'moonshins' accident; and we've just got a good start, with prohibition running smoothly."

Nobel Prizes.—The Swedish Academy of Science has awarded the 1923 Nobel prize for physics to Prof. Robert A. Millikan, director of the Norman Bridge Laboratory, Pasadena, Calif., for research concerning electrical unit charges, photoelectrical effects, and isolation of electrons. Professor Millikan was professor of physics at the University of Chicago from 1910

to 1921. The 1923 prize for chemistry has been awarded to Prof. Friedrich Pregl, professor of chemistry, University of Graz, Austria, for work on micro-analysis.

No Time Limit to Liquor Prescriptions.—No time limit restrictions for the honoring of physicians' prescriptions for liquor have been set, it was stated at the prohibition office, Washington, D. C., October 19. Reports that prohibition agents had been ordered to treat with suspicion any holder of a certificate who does not have it filled promptly were denied at headquarters.

"Radiology," the new journal of the Radiological Society of North America appears with the September number. It is being published in St. Paul with J. R. Bruce as business manager and a very strong editorial staff headed by Dr. M. J. Hubeny of Chicago. The first two issues, both in its mechanical set up and in its subject matter, give promise that this journal, backed by the largest radiologic society in the world, will take its place among the really great journals of the world.

\$5,000,000 Insurance on Discoverer of Insulin.—Dr. F. G. Banting, discoverer of the insulin treatment for diabetes, has become one of the most heavily insured men in the world. It was learned recently that policies totalling \$5,000,000 have been placed in his name.

Southern Medical Association.—At the final session of the Southern Medical Association held at Washington, D. C., November 15, Dr. Charles L. Minor, Asheville, N. C., former president of the National Tuberculosis Association, was elected president. Other officers elected were: Dr. Robert C. Lynch, New Orleans, vice-president; Dr. Thomas A. Groover, Washington, D. C., second vice-president; C. P. Loranz, Birmingham, Ala., secretary-manager, and Dr. Marye Y. Dabney, Birmingham, editor of the Association's journal. Next year's convention will be held in New Orleans.

Eyeball Transplanted by Japanese Surgeon.—Successful transplanting of a human eyeball is reported to have been accomplished at the Tohoku Imperial University, Japan, by Dr. Sandama Ochi, professor of medicine. He is said to have discovered that an eyeball can be transferred from one person to another when the blood of the two persons is of exactly the same quality and consistency. Discussing the report, London medical experts took the view that the feat was absolutely impossible.

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The Hospital of Today.—The report of the *United Hospital Fund of New York* indicates not merely the interest and assistance of the ten thousand contributors in amassing more than a half million dollars for distribution to hospitals on the basis of their free service, but it demonstrates a recognition of the actual value of hospital service to the community.

New York City, in addition to its twenty large municipal hospitals, maintained by taxation, and approximately seventy-five private hospitals conducted by physicians, has one hundred and twenty hospitals seeking support from voluntary contributors. The magnitude of this hospital service suggests the knowledge the general public should have of hospital organization. It is difficult for a small hospital to be economical or efficient. The requirements of modern medicine demand large institutions adequately organized, with splendid equipment and a strong personnel. Public support should be conditioned upon the modernization of the hospital plant and the type of service that is performed.

To a considerable extent the general organization of hospitals makes provision for those able to afford a room in the private pavilion and for those belonging to the group generally denominated as the poor. The great middle class—the average wage earner—has difficulty in securing hospital care without hazarding his limited resources by taking a private room or lessening his self-respect by submitting to ward treat-

ment. There is a definite need for a semi-private service, whereby patients share a room containing from two to six beds. An average man can and is willing to pay the actual hospital fees and, in addition, a moderate fee to his medical attendant. The growth of this type of service to meet the growing demand is exemplified by the fact that in New York City forty-one hospitals now have a semi-private service and nine per cent. of the total number of beds may be classified in this manner. This growth in usefulness to the public merits recognition.

A tremendous social health value of the large hospital lies in its service to the ambulant sick. In New York City, for example, there are 225 dispensaries, in which more than 3,000 physicians are engaged in treating a million and a quarter patients annually. Approximately one-half of these dispensaries are now devoted to phases of public health and preventive medicine. Fifty-seven are out-patient departments attached to general hospitals; 27 are connected with special hospitals, while only 35 are entirely detached from hospital service. The large number now devoting themselves to prophylactic medicine indicates the growing trend of the times. In all probability there would be a greater gain in this type of dispensary service by having it an integral part of the out-patient department of all general hospitals. There should be an increasing effort to unite all medical services, particularly in institutions supported

by public taxation, so that preventive medicine becomes as important as therapeutic medicine.

From the standpoint of per capita costs and per capita results, there is ample evidence to indicate that preventive medicine is less costly in its administration and far richer in its accomplishments. A greater material of service can be provided at minimum cost. The most essential factor is the point of view of the hospitals.

The general public, giving support to medical institutions, should be freely provided with information concerning the plans and scope of the activities of large hospitals. The needs and facilities are matters of public concern. Accurate information and authoritative advice concerning community needs for hospital service are basic elements for rational financial support.

An intelligent community should see in a hospital more than an institution for the care of the sick. Hospital work should be integrated into community life, as it manifestly is involved in every phase of human welfare. The hospital is not merely located in the community, but it is part of the community. Its activities should radiate into every field of communal activity. The smaller the population it serves the more essential its fullest development becomes. A single hospital in a small city may be developed to care for all its needs and thus lessen the need for a duplication of institutions or the support of more than one place which involves the overlapping of effort, energy and expense.

Hence the voluntary support of hospitals should depend upon the dissemination of information that secures the education of the average citizen. The citizen is a wiser and more liberal giver when he appreciates his personal interests in and the advantages

to be derived from the hospital he is urged to assist. This is the basis for securing a generous public support for a sympathetic, intelligent, understanding and far-visioned public hospital.

The manifold duties and responsibilities of the modern hospital are increasing by tremendous leaps as their possibilities and worth are being understood. The part the modern hospital plays in curing the sick is by no means the only element meriting consideration. The element of research, education, social service, out-patient guidance and treatment, and general participation in raising the standards of health in the community present even more significant values.

Contributors should have information concerning salaries and wages, the methods of training physicians and nurses, the per capita costs for meeting the needs of different types of patient, the costs and values of laboratories and research work, and the interrelations of the hospital and social agencies. Facts of this character are easily compiled. There is necessary, however, some definite effort to establish a survey of the entire situation.

Communities, large and small, are benefited by a survey of their hospital needs in terms of existent and required organizations. The statistical arrangement of communal facts constitutes a powerful argument, either in favor of or against special appropriations. Similarly, they provide forceful appeals to intelligent donors, whose heartier interest may be elicited thru a scientific, logical appeal to their intelligence and their pocketbooks.

The United Hospital Fund of New York has been singularly successful in its efforts to allot funds to the 56 hospitals included in their organization. The 56 united hospitals during 1922 had an aggregate income

of more than \$15,000,000.00, of which 16 per cent. was an income derived from endowment and 13½ per cent. from direct gifts. The United Hospital Fund only supplied 3¾ per cent. of the income, but this was sufficient to keep the income deficit down to 2 per cent. The money was expended so that only 7 per cent. went for administration, while 61 per cent. was directly applied for doctors, nurses, drugs, surgical supplies, food, laundry and service, with an additional 12 per cent. for the out-patient department. The basis of the United Hospital Funds service has been the encouragement of better hospital service, as a result of cooperation, coordination of activities, intelligent administration and extension of service in large hospitals already existent, rather than to encourage new and small institutions.

While the problem of New York exists in only a comparatively few similar large cities in the United States, the philosophy underlying hospital organizations obtains thruout the United States. What is needed today is not more hospitals, but better ones, a wider development of a social program, with a concomitant increase of public interest and public support.

Anatomic Position versus Function.—

Gastrophtosis has been regarded as a definite entity and much has been written concerning its etiology, symptomatology, pathology, and treatment. It has been accepted along with visceroptosis as a pathologic condition very frequently inducing considerable bodily distress. Our ideas of both conditions are more or less relics of medicine during the years before the Roentgen-rays were available for diagnostic purposes.

When Roentgen-ray began to be employed in the diagnosis of gastrointestinal

diseases, a considerable range of variability of visceral placement was noted. For many years the prevailing idea concerning the theoretic normal position of the stomach was based upon the investigation of individuals actually complaining from some gastroenteric disturbances.

Moody, Van Nuys and Chamberlain have made a distinct contribution to the study of the stomach, liver and colon (*Journal of the American Medical Association*, December 8, 1923). While they present merely a preliminary report, their study is based upon the position of these viscera in six hundred healthy young adults, none of whom presented a history of chronic gastrointestinal distress or even chronic constipation. Their findings call for thoughtful consideration, and will undoubtedly materially affect opinions concerning the natural position of the normal viscera.

The graphs which they present bear every evidence of accuracy in that they appear to follow the general probability curve that obtains in most statistical analyses. In some instances there appears to be a skewing to the right or left, but it is not impossible that some correction of this would be obtained if there were larger numbers of subjects being studied. Their summary merits quotation:

"1. The long stomach, commonly reaching from three to seven cm. caudad of the interiliac line and often into the true pelvis, is found in 80.6 per cent. of this group of healthy adults. This type of stomach, with its greater curvature, dipping in some cases as far as 13 cm. caudad of the interiliac line and its lesser curvature dipping in some cases as far as 7.5 cm. caudad of the line, is normal.

"2. This low position of the stomach is seldom or never a cause of gastrointestinal disturbances.

"3. The low colon, lying in the true pelvis, is also normal, and is seldom or never the cause of gastrointestinal disturbance.

"4. The strength of the abdominal muscles has little or no influence on the position of the stomach.

"5. The use of the terms gastrophtosis and coloptosis is seldom justified.

"6. With the subject standing, the liver extends caudad of the interiliac line in a majority of the men and in a large percentage of the women. It reaches farther caudad in men than in women.

"7. The common practice of putting patients to bed with a high diet and certain exercises prescribed to change the position of the stomach does not produce its beneficial effects by changing the position of the stomach."

It would appear that the position of the stomach has practically little influence upon its function. The tone of viscera is of more importance than their locations. Just as in cardiology the tonus of the myocardium is of greater significance than the presence of a murmur, so in gastroenterology the vitality of the stomach and intestines is of greater significance than the position of the abdomen.

Here again is an illustration of the difference between the coexistence of phenomena and causal relations. Gastric distress, with the larger curve of the stomach in the pelvis, does not establish a causal nexus between them.

While the Roentgen-ray has contributed valuable information, its most effective service arises from the interpretation of its shadows. The truths projected photographically exist only for those possessing an adequate background for rational comparison. Obviously, a considerable degree of error has cropped out in gastroenterologic discussions, because there have been insufficient Roentgenologic studies of normal individuals to establish the topographic norms for viscera. It is for this reason that studies of the type indicated possess a special value. The knowledge elicited by studies of normal individuals serves as a

criterion for differential diagnosis. Certainly no organ can be said to be abnormally located unless its normal position has been adequately determined. Nor do variations from the median necessarily carry with them the implication of malposition. Averages and medians can only be secured, when in the normal curve of distribution some are above and some are below a definite point or line. Hence a stomach, for example, may be in normal position, and because of lack of tone there may be gastric disease, or the stomach may be far above or correspondingly below the interiliac line and be completely normal in its function and position.

Apparently our views concerning the position of the stomach, intestines and liver must concern themselves far more with function than anatomic position. And what holds true in the alimentary tract probably applies to studies of other anatomic systems of the body. The art of living is constituted in terms of functions and dynamics. Anatomy provides knowledge of structure and structural relations, but physiology determines the major values of serviceability.

Industrial Accidents.—Where there is ample evidence that industrial accidents have decreased in some specific industries, there is little indication that accidents have declined in industry as a whole. In *The Monthly Labor Review*, November, 1923, Hookstadt, writing on "Estimated Annual Number and Cost of Accidents in the United States," states, "Present indications point to an exceptionally large number of accidents for the year 1923." Whatever reduction of accidents may have arisen from the increased employment of safety devices is a matter of surmise and conjecture, save for a comparatively small number of individual plants.

This uncertainty of information arises from the absence of uniform and reliable statistics. Even the number of industrial facilities is unknown, estimates concerning them ranging from 12,500 to 35,000 per annum.

By careful statistical methods, Hookstadt tabulates the number of industrial accidents in the United States per annum as almost 2,500,000. There is involved with these accidents the loss of more than 227,000,000 working days. The wage loss incident to industrial accidents amounts, therefore, to more than \$1,000,000,000.

An estimation of the number of fatalities sustained in industry by the more than 41,000,000 persons employed, whether as employers and self-employed, or employees, would amount to more than 30,000 per annum. This means the wiping out of a valuable population, such as would be found in a fairly large city of the country. The results of accidents among employees annually are approximately distributed as follows: Deaths, 21,232; permanent total disability, 1,728; permanent partial disability, 105,629; temporary total disability, 2,324, 829.

While the annual cost of the industrial accidents is estimated as being more than \$1,000,000,000, this falls far short of representing the entire cost to the community. There should be added at least \$75,000,000 for medical and hospital service, as well as the administrative expenses of compensation commissions and insurance companies. And there should not be forgotten those intangible effects upon industry and production which are difficult to estimate, but, nevertheless, exist as considerable sums in the aggregate.

Nor do approximations of the cost of industrial accidents take cognizance of social factors, which merely represent indirect economic disturbances. It is difficult to

measure the financial cost of the loss of a father, as a father, rather than as a wage earner. Economically, the cost of a father would appear to be partially mitigated by the entry of a fifteen or sixteen year old boy into industry, but what is the measure of communal cost, if the imperative necessity of work throttles education and thwarts ambition? What is the cost of an industrial accident that plunges a family, previously self-respecting and independent, into life at a lower standard of living, with a shifting of ideals and standards, nearer the borderline of dependency?

Unfortunately, most financial estimations of costs fail to give consideration to the social losses of communities, even tho it be true that the communities are obliged to pay for the social inadequacies resulting from wage losses incident to fatalities and injuries in industry.

The sum total of industrial accidents is sufficiently large to challenge industries. The wage loss is a tremendous burden to the families and the victims of accidents. The social losses merit closer study, in order that communities may secure a better perspective of the relation of industrial accidents to social development.

Cardiac Classes in Schools.—The tendencies of educational institutions to establish special classes frequently tends to become over-enthusiastic. As a result, classes are instituted at great cost to the tax-payers, without a scientific reason for their institution. Sentiment or specific interest, tied up with social pressure, frequently brings about an organization within the school that is not wholly justified. An excellent example of this is found in the recent *Special Report on Cardiac Classes*, issued by Will-

iam L. Ettinger, Superintendent of Schools of New York City.

A special committee of the Association for the Prevention and Relief of Heart Disease was requested in 1916 to undertake a study of cardiopathic children in the public schools. The results of this inquiry were based upon a very careful investigation of the problem, which indicated that the total number of children with organic heart disease was only 0.7 per cent. of the school population. Further, children possessing cardiac defects were classified according to the method adopted in 1921, by the Association of Cardiac Clinics. As a result, fifty-five per cent. of the children with organic disease were able to carry on their habitual physical activity (Class A); thirty-seven per cent. were able to carry on, with a slightly decreased activity (Class 2A); and seven per cent. with considerably decreased physical activity (Class 2B). Less than one per cent. belonged to the group of children unable to carry on any physical activity (Class 3).

Patently, the Class 3 children (in New York City less than sixty in number) should not be at school, but should be either at rest at home or under supervision in a hospital or convalescent home, until their physical status has improved, so that they may be considered members of the second class, entitled to some degree of physical exertion.

As a result of this knowledge, the Board of Education has been advised:

"I. That the establishment in the Public School System of 'special segregated classes' for children with heart disease is unnecessary and undesirable.

"II. That special endeavor be made to the end that every child shall have a thoro medical examination immediately after its first admission to school.

"III. That all children reported by the school medical inspector as having any de-

fect of the heart should be re-examined by the family physician or at a special Cardiac Clinic, so that they may be classified as to the kind and degree of heart defect and may be followed up thruout their school careers to insure adequate medical and nursing supervision of their manner of living.

"IV. That teachers devote their time to the pedagogical training of the child with heart disease and that the medical supervision of these children be provided by the family physician or the physicians of the Cardiac Clinics with the assistance of the school nurse."

There is little question as to the soundness of this medical document, despite the effort of the supervisor of these classes to save them to the system. Certainly what is unnecessary for ninety-two per cent. of children with heart disease should not be made the basis of an established policy for dealing with children with cardiac disease, particularly when "there are other less expensive and quite as practical measures which would produce the desired results."

The principle of segregation of children with heart disease is psychologically unsound, as is the principle of endeavoring to teach children, when they should have complete rest. This does not mean that teachers should not be employed in homes for "cardiac" children, but that the principle of instructing children while they are physically unable to profit thereby is indefensible from the standpoint of pedagogy, medicine, or taxation.

The experience of New York City, which at present possesses thirty-two classes for cardiopathic children (accommodating 800 children) may properly serve as a basis of appreciating the nature of the problem and its pedagogic implication. The better physical care and education of children handicapped by heart disease is the aim of the special service. The cost in New York City was \$21.00 per child per school year, by the

method of segregation and special classes. This is a tremendously high expenditure, particularly when viewed in the light of the need of the children and their educational benefits.

The real elements entering into the prevention of damage to the heart involve more careful supervision and protection of the child against exposure to wet and cold, longer periods of convalescence after tonsillitis and other infections, and the frequent examination of children, particularly after acute illnesses, in order that defects may be avoided and if developed that they may be recognized and given adequate care at the earliest moment. This obviously is a responsibility of the Department of Education and the Department of Health, but is applicable to all children and does not constitute special measures set apart for actual or potential sufferers from cardiac disease.

The brunt of service for the prevention of heart disease must fall upon agencies dealing with children during the pre-school age, as statistics amply demonstrate that cardiac damages are largely incidents of the pre-school period.

The Variations in Hemoglobin.—The estimation of hemoglobin possesses a definite clinical value, but like all other laboratory tests, its worth depends upon its interpretation as part of a general clinical history.

The determination of the worth of hemoglobin tests involves an appreciation of the constant errors arising from the nature of the apparatus or methods employed, as well as from the accidental errors arising out of the personal equation of the observer. Various methods of hemoglobin determination have been introduced, but probably the

most reliable is the gasometric method of Van Slyke, which depends upon the oxygen-carrying capacity of the blood.

In *The Journal of Laboratory and Clinical Medicine*, November, 1923, Rabinovitch points out a factor not generally recognized in the interpretation of estimations, namely, the possibility of diurnal variations. In the interests of accurate knowledge of the hemoglobin content of the blood, particularly as related to judgments founded upon repeated examinations of the blood among anemics, it is important to realize that diurnal variations do occur. By the examination of blood specimens secured by venous puncture, in order to eliminate all sources of error involved in examining capillary blood, a definite diurnal variation of hemoglobin was apparent. Blood specimens were procured every two hours from eight A. M. until six P. M. While in a few instances the hemoglobin percentage varied within very narrow limits, in at least two of the twenty individuals studied the variation approximated twenty-six per cent. In four instances the variation ranged between fifteen and twenty per cent., and in six patients the maximum variation lay between ten and fifteen per cent.

It is apparent, therefore, that the hour at which hemoglobin estimation is made may serve as a confusing factor in passing judgment as to whether an actual improvement in hemoglobin content has occurred. In only three out of the twenty individuals whose blood was examined was the maximum variation of hemoglobin percentage below five per cent., while in six it was over fifteen per cent., and the median of the maximum variations lay between 11.8 and 12 per cent. Patently, this degree of variation of hemoglobin percentage in the same individual during the same day may lead to

false interpretation, assuming that at one examination the determination occurred at the hour of lowest hemoglobin content and upon the following day at the hour of maximum percentage, or *vice versa*.

The errors involved in most methods of hemoglobin determination vary from five to fifteen per cent. Wherefore it becomes important to take cognizance of all factors entering into variations of the estimations of hemoglobin that are not incidental either to defects inherent in the apparatus or errors in judgment, based upon the personal equation.

From a clinical standpoint, the anemics demand a study of the red corpuscles and the leucocytes, in addition to the estimation of hemoglobin. The hemoglobin index is dependent upon a knowledge of both the total number of red cells and the hemoglobin. The differentiation of anemics requires the study of the morphology of the red corpuscles, while a complete picture of the blood tissue involves an estimation of the leucocytes, and a quantitative and differential determination of the various forms of leucocytes. Routine examinations for the most part are approximations, but for the careful, scientific study of diseases of the blood, refinements in technic are essential.

It is unfortunate that the study of Rabinovitch did not include the nocturnal variations in the blood, so that there might be some basis of inquiry into the causes at work to account for the definite variations of the hemoglobin in the blood stream during the entire twenty-four hours. The various rhythms in the body merit study, because their nature is but little understood. Even the variations of waking and sleeping hours have escaped a final, acceptable conclusion as to their cause.

The Renovated Mattress.—The Department of Health of Chicago, investigating the traffic in discarded mattresses, has revealed a new type of danger to the community.

Sanitary codes endeavor to protect communities from a large variety of hazards from second-hand material. It is difficult to enact codes that will safeguard communities against every possible type of infective material, and it is still more problematical how to enforce the code so vigorously as to attain the ends desired.

The city of Chicago's sanitary code is adequate, but inspection has shown that old, discarded mattresses, however stained by blood or pus, or infected by vermin, are sold to unscrupulous manufacturers, who, without any process of sterilization, convert them into so-called new mattresses.

The Health Department inspectors have revealed conditions in the industry which are distinctly unhealthful. Laboratory tests have revealed various types of pyogenic and other pathogenic organisms in the uncleansed, unsterilized, re-shredded, old mattress material that is employed in stuffing new mattress tickings.

Patently, the practice of manufacturing mattresses or cotton felt from the fillings of filthy, contaminated and vermin-infested material is to be condemned. The esthetic rejection of the idea of sleeping upon material that has been infected by blood, sputum, excreta and vermin is natural, but this natural repulsion is of secondary importance to the facts bound up in the hazards of health. It is not unlikely that such unsterilized material may prove a source of disease to the possessor of one of these renovated mattresses. There obviously presents the possibility of parasitic skin disease, boils and carbuncles, or, in-

deed, the transmission of tubercle bacilli, or perhaps a slight hazard from diseases that may be carried by bedbugs and fleas.

Taken as a whole, the second-hand mattress that is purchased as new, carries with it an element of fraud, unless there is an indication as to the actual contents of the ticking. The harm results not so much from the financial exploitation of the purchaser as from the misrepresentation implied when a mattress is purchased as new, whose filling represents, in fact, the shavings of mattresses long used, discarded and junked. The exploitation is rather one of the confidence of the purchaser in the essential cleanliness and sanitary character of the mattress purchased.

The *Weekly Bulletin* of the Chicago Department of Health, November 10, 1923, points out the menace of this illicit traffic in insanitary mattresses. It suggests as possible infections, tuberculosis, typhus fever, leprosy, and other skin diseases. Even tho health hazards may be exceedingly remote, innocent purchasers should be protected against potential infection from such sources. The steps now being taken by the Department of Health of Chicago to eliminate these dangers by a more strict enforcement of ordinances prohibiting the use of unsterilized material in re-built mattresses merits thoughtful consideration. Control of this illicit industry concerns not merely municipalities, but states, and probably is a subject for the consideration of the U. S. Public Health Service and the Interstate Commerce Commission.

A Caution in Sterilization.—The general use of alcohol for the sterilization of surgical instruments has been accepted without question as to its efficacy. In the Bos-

ton *Medical and Surgical Journal* of October 18, 1923, Nye and Mallory indicate the dependability upon this procedure as unwarranted.

Two instances of death from gas bacillus infection following operations occurring in the Boston City Hospital sufficed to cause an investigation to locate the source of infection. Under operating room routine all scalpels, scissors, and knife blades had been washed thoroly in hot soap and water, rinsed in scalding water, and then stored in the instrument cases. Before again being used they were placed in a sterilizing solution of 70 per cent. alcohol for from five to twenty minutes. The bacteriologic investigation as to the value of the 70 per cent. alcohol for promoting an aseptic technic indicates that immersion in 70 per cent. alcohol for one hour fails to sterilize instruments infected with bacilli belonging to the *B. aërogenes capsulatus* group.

As a result of this fact, it was decided to sterilize the scalpels, scissors, and knife blades along with all other instruments by immersion in boiling water for twenty minutes—but the Bard-Parker blades were discarded after use. Following this alteration in the technic of sterilization, no further instances of post-operative infection occurred in which the suspicion could be placed upon the instrument as a source of contamination.

This indicates the vitality of the sporulating bacilli and certainly evidences a weakness in 70 per cent. alcohol as a medium for satisfying the demands for aseptic instruments at the beginning of operations. Inasmuch as gas infection is of most serious moment, regardless of its infrequency, it would appear to be imperative for hospitals depending upon alcohol as a sterilizant to alter their technic in conformity with the results obtained by Nye and Mallory.



The High Cost of Reform.—For all our criticism of the European peoples and what we consider their corrupt civilization, it must be acknowledged that they have a more accurate opinion than ourselves of the value of modern progress. As a nation we are easily taken in by deceptive indications of progress and are too wont to believe that man has shown signs of a measure of progress in keeping with the advance in material things. On November 11, 1918, we thought the world was ready for a new era; that, after going thru a frightful baptism of fire and suffering, man's nature had altered and was prepared for a new and more exalted career. Europe, under no such misapprehension regarding the true nature of man, continued along its former course, and the result was that we retired from the unequal contest, disillusioned and dismayed. Having learned nothing from our experience with Europe, we continued to exploit our misunderstanding of the nature of man by a series of idealistic reforms at home, and our success has been as doubtful as the adventure in Europe. Our entire internal policy for the past decade or two has been a misguided effort to impose a standard of virtue on man for which he is in no wise yet prepared, while Europe, with a realism characteristic of an older and shrewder race, has allowed human nature to pursue its slow course and has contented itself with exacting a heavy revenue from human frailty. Therein lies the chief difference between the American and the European reformer. "If the world is wicked, let us make it good," says the American. "If the world is wicked, let us make it pay," says the European.

About a quarter of a century ago there disappeared from the candy shops in the larger cities a modified sort of roulette wheel in which school children risked their pennies on a chance of winning more sweets than their pennies could buy over the

counter. That was the first step in a series of reforms tending to suppress gambling in candy shops, on race courses, in privately conducted gaming establishments. The campaign against vice, seeming to prosper because all outward evidence was removed, was intensified, leading to a grand climax in the suppression of liquor. What has been the result of all these suppressions? The nature of man has not changed, only outward appearances have altered, and there is as much gaming, betting and drinking today as there was a quarter of a century ago. The only net result has been that the Government has been cheated of an enormous revenue. How great this loss has been may be judged from the cost of prohibition, both in point of loss of liquor taxes and cost of maintaining a large army of prohibition officers. It is folly to think that the nature of man can be altered by law, and the American reformer, tho seeming more idealistic than the European, is really only more gullible. In Europe, where it is recognized that man can be altered only by the exceedingly slow process of time and that legislation in this direction is futile, a more practical solution has been found. Man's vices, while not encouraged, are made to contribute largely to the cost of maintaining the Government. There is unlimited drinking, unlimited gambling, unauthorized vice in its various forms, but these pay a heavy tax to the Government. And thus the virtuous individual can live more cheaply because his less virtuous fellow-citizen is made to pay heavily for his frailties. The various parties, in search of an internal policy for the next presidential campaign, might well make this their platform: To authorize the at-present unauthorized drinking and gambling and other vices and to divert into the treasury the heavy revenues they are bringing into the pockets of a class of conscienceless citizens who are only too willing to enrich them-

selves where the Government is trying to impoverish itself. The municipality of Monte Carlo exists off its gambling revenues, and the Government could easily pay its way in the same manner by taxing vice instead of pretending that it does not exist.

Venereal Disease in Great Britain.—

For some time, in fact, ever since the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Diseases were founded, there has been disagreement between these two bodies on certain points. Perhaps, the main subject of disagreement was the proposal of the Society for the Prevention of Venereal Diseases that disinfection should be done immediately or very shortly after intercourse and that for this purpose chemists should be allowed to sell to the general public disinfectants approved by some competent authority. At the Joint Conference between the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Diseases, held at the House of the Royal Society of Medicine in London, on October 30, last, the following resolutions were adopted: 1. That the ultimate fusion of the two societies is desirable. 2. Subject to the approval of their respective executives the conference resolves itself into a deputation to the Minister of Health to urge "that the law should be altered so as to permit properly qualified chemists to sell *ad hoc* disinfectants, provided that such disinfectants are sold in a form approved and with instructions for use approved by some competent authority. 3. That this conference recommends that the respective executives of the two societies should each appoint not more than five members to form a liaison committee between the two societies, and to explore the possibilities of the fusion.

It seems that matters are well on the way for the amalgamation of these two bodies. This augurs well for the campaign against venereal disease in Great Britain. The fact that the two bodies differed in their views as to the most effective way of dealing with venereal diseases, hampered very considerably the prosecution of a vigorous crusade against these maladies. Slogan of the Prevention of Venereal Diseases, as the name

implies, was frankly that of immediate prevention, while the National Council were in favor of more conservative measures. If the Minister of Health heeds the suggestion of the joint deputation and recommends to the Government that the law should be altered in the manner advocated in resolution 2, the result will be in the nature of a victory for the Society for the Prevention of Venereal Diseases and also the outcome will be largely due to the untiring energy of Dr. H. Wansey Bayly, the society's able secretary. With the authorities on venereal diseases in Great Britain working in unison, such an energetic onslaught should be made on these diseases, or rather these sources of chronic ill health and death, not to mention the menace of their spread, should be prevented.

The Value of Alcohol.—Professor Ernest H. Starling, Professor of Physiology in the University of London, the author of the well-known work on "Physiology" has just had published by Longman and Son a remarkable book written by him entitled, "The Action of Alcohol on Man." This book was written at the suggestion of Sir John MacAlister, secretary of the Royal Society of Medicine, and contains essays on various aspects of the question by Dr. Robert Hutchison, author of a standard work on food, Sir Frederick W. Mott, pathologist to the London County Council Asylums, and Professor Raymond P. Pearl of the Johns Hopkins University. The conclusions these writers draw from the masses of evidence they bring forward will doubtless provoke intense controversy. Professor Starling points out that we have only to look at the leaders in every walk of life, members of the Government and of the Civil Service, judges, leaders of the bar and of the medical profession, Fellows of the Royal Society, heads of the big industrial and commercial concerns. In each group there is found only a small handful who are total abstainers, but a census would probably give only 90 per cent. who habitually partake of small doses of alcohol. Professor Starling goes on to state that in such cases there is no question of a craving for alcohol or a feeling of mal-adaption to environment to be drowned in forgetfulness. The use of alcoholic drinks among such

men is an addition to the amenities of existence and is a means of increasing the pleasure, joy and profit in life. Health is in most persons a necessary condition of success, and most of the members of the leading groups of society enumerated are distinguished not only by their good general health, but also by the fact that they live to a ripe old age. The general principle laid down by Professor Starling is that it is difficult to appreciate any harmful effects from the moderate use of alcohol, whereas when temperance is abandoned and alcohol is used immoderately its effects are evil and fraught with disaster to the individual and danger to the community.

Throughout the book which is, to a large extent, a defense of alcohol, the distinction between moderation and unbridled license is insisted upon. In a chapter which deals with the action of alcohol on human behavior the author compares the dull depression or the forced merriment of a teetotal party with the natural flow of spirits and good fellowship which distinguish an ordinary feast of which alcoholic drink forms a part. Moreover, Professor Starling insists that in some individuals moderate doses of alcohol may actually improve efficiency of performance. The general conclusion to be gathered from this book is that in a civilized society such as ours the abolition of all alcoholic beverages, even if carried out by universal consent, would be a mistake and contrary to the permanent interest of the race.

Professor Starling is easily one of the first physiologists of the time, and his colleagues in writing the book are one and all distinguished men of science. Therefore the views of these men must carry weight.

There has been somewhat of a revulsion recently against the endeavors of a part of the community to push their opinions on alcohol down the throats of the other part of the community. In the first instance this is a direct interference with the liberty of the citizen, but if it were for the undoubted good of the community as a whole and the race, the procedure would be justified, in fact, meritorious. And this is the point which is so controversial. The advocates of total abstinence from alcohol state unreservedly that medical science is all on their side. And the man in the street is apt to believe this statement. Of late, however,

voices which command attention on account of the prominence of the speakers in medical science have been raised in support of moderate drinking. This book represents the opinions of men of the first rank in medical science in Great Britain and is backed up by authoritative opinion from this country. The question of alcohol as a beverage has not been decided yet, but is still open to discussion. Has prohibition been an advantage to this country? This is a question too which is still open to argument and the last and decisive word has not been said on the question of alcohol.

Influence of Diet on the Respiratory Tract and on the Eyes.

Recent investigations that are still going on, seem to show that the kind of food one eats has a direct etiologic relation to diseases of the eyes, and also those of the nose, throat and lungs.

This work has not yet been published, but during the past two years Dr. Amy Daniels, Dr. Margaret E. Armstrong, and Dr. Mary Hutton of the Department of Nutrition in the University of Iowa have made many studies on the lower animals, particularly rats, concerning the relation of pre-natal feeding to rickets in children.

These investigators have been working with a vitamine called vitamine "A" which is soluble in fatty substances and is contained in many foods consumed by human beings. Between four hundred and five hundred animals were fed on this material, and they practically all developed snuffles, labored breathing and loss of appetite. Young animals would grow fairly well on this food for a couple of months, then become stationary and finally show a sudden drop in weight, health and strength. If given soon enough, cod liver oil and butter oil would restore them to their former condition, but after a certain point was reached nothing would bring them back. On opening the skulls of such dead animals, pus was found in the mastoid cells and in the nasal sinuses. Besides these signs, abscesses were found at the base of the tongue. Vitamines are curious food substances of unknown chemical composition which exist in very small quantities in any given food. They are necessary, however, to nutrition and growth, and their absence brings about

such diseases as scurvy, rickets and beri-beri. The characteristic disease produced by vitamine deficiency is an eye condition known as xerophthalmia, which is a dry shrinking of the cornea and ultimate loss of vision.

Lack of this fat-soluble vitamine makes the body more susceptible to invasion by bacteria, while cod liver oil or butter oil helps to resist bacterial invasion. Another fact is that rickets is not due to lack of calcium or other mineral salts, the view long held by scientists, but to low fat-soluble vitamines in the body.

In feeding sick children, say the authors of this new scientific study, the essential foods are protein, inorganic materials and vitamines, of which vitamines be considered first. When children are receiving enough of these for body building, one can then consider the caloric needs, but not before. This is an entirely different point of view from that held in most hospitals and clinics. It puts less emphasis on cereals which should be eaten for the purpose of supplying energy rather than growth. In cases of high fever, or in acidosis, sugars and starches are first in importance in order to meet the critical condition.

Specialists in eye, ear and throat are especially interested in these investigations, as they help to explain the presence of pus, and the difficulty in curing some cases even after thoro operative work has been done. Perhaps, by making certain dietary changes, a more prompt and efficient healing of the diseased tissues may be brought about.

Toxemia and Mental Disorder.—Mr. T. L. Garvin, the brilliant English writer of Irish birth, truly said a short time ago that heresy is the secret of progress. Without the ventilation of heretical, even revolutionary, views we should get into a rut and make no advance. This is, perhaps, especially true of medicine. Reformers or those who attempt to introduce new ideas into the practice of medicine or surgery are generally regarded somewhat askance by the leaders of the profession. Therefore, new views as to the causation and therefore the treatment of some forms of insanity are not looked upon with favor by authorities on the subject and particu-

larly by men who have made their reputation by the introduction and promulgation of other theories. However, that there is an intimate relationship between bodily disease, or ill health, and mental disorders is now an accepted fact and, moreover, in the opinion of many investigators mental disorders have their origin, generally speaking, in physical disorders. Of course, post-mortem examination sometimes shows that insanity is due to disease. But the causes of the majority of the types of insanity are obscure because post-mortem examination reveals nothing. Sir George Savage, a British alienist, suggested in 1876 that these types were owing, in many cases, to chronic poisoning of the patient's system. This line of inquiry was continued by Roger, a Frenchman, Dr. William Hunter, Henry S. Upson and others. The result of these and later investigations promises to bring about a revolution in the treatment of certain prevalent types of insanity. Dr. William Hunter, the Scotchman, whom almost everybody in America knows as the pioneer of the theory that septic teeth are the *fons et origo* of a multitude of diseases and whose teachings are largely responsible for spreading the doctrine of oral asepsis, believes that septic foci may be the initiatory cause of certain forms of mental aberration. The man in Great Britain who most persistently and patiently delved into the matter and who made some points, at least, clear was the late Dr. William Ford Robertson, Pathologist to the Scottish Asylums, whose untimely death we have had recently to deplore. In 1912, Ford Robertson gave most of his time to the bacteriologic investigations of dementia *præcox* and the acute insanities. In 1921 he published his classic on "Therapeutic Immunization in Asylum and General Practice." The outcome of the researches tended to the belief that the more thoroly the pathogenesis of insanity is studied the more extensive becomes the group in which infection is shown to be an essential factor—as, in fact, it is shown to be in bodily diseases. Further, that the pathogenic importance of many of the organisms inhabiting the body can be demonstrated by focal reaction. Among these organisms he drew special attention to anaerobic, to which hitherto slight attention had been paid. In addition

he demonstrated, to some extent, that many of these pathogenic infections could be effectually controlled and eliminated by means of specific immunization with auto-gogenous vaccines, in each case derived from the patient and rendered more powerful by sensitization by antiserum obtained from immunized sheep and by his gravimetric method of preparing vaccines so as to secure more accurate dosages. It must be borne in mind in order to appreciate the weight of this theory that many of these aerobic and anaerobic infections are neuro-toxic and, consequently, in neurotic individuals they attack the vulnerable higher brain cells which fix the toxins and give rise to various forms of insanity, and according to Ford Robertson's latest work they paralyze the nervous mechanism of the intestine, producing a condition of intestinal stasis with resultant secondary putrefactive autointoxication, under the strain and stress of which the brain cells finally break down. Thus in his opinion is dementia *præcox* or permanent mental enfeeblement brought about. Dr. Ford Robertson explained by scientific investigation to some extent what Sir Arbuthnot Lane has long preached, that chronic intestinal stasis will produce autointoxication, which in its turn will result in various diseases, physical and mental, according as the industrial idiosyncrasy or predisposition tended. Ford Robertson was at the point in his investigations when he could be least spared. A namesake of his, Dr. White Robertson, also a Scotchman, is carrying on investigations in a similar direction in London. Dr. White Robertson has been making researches with the object of tracing a relationship between epilepsy and chronic intestinal stasis. He has narrated the results of his investigations in an article published in the August number of the *London Practitioner*. He states that in practically all severe and long-standing cases of epilepsy the clinical and laboratory investigation has disclosed a degree of intestinal stasis compatible only with the existence of serious dislocation by ptosis or obstruction by adhesions or acquired bands. He is inclined to believe that intestinal stasis is the chief factor in epilepsy and other gross nervous and mental conditions. He is inclined to consider the heredity factor rather in the light of a passive "installa-

tion," the active current being the toxin. If both are present in a case, epileptic phenomena will develop. If one or other is absent, there can be no epilepsy in the individual. The question of relationship between chronic sepsis and mental disorder is being investigated by Dr. Graves, the head of a large asylum in Birmingham and by Dr. Goodall, in charge of a large asylum in Cardiff. Both these workers are handicapped by lack of wholly adequate laboratory facilities, and unfortunately many asylums in Great Britain are not suitably equipped with the necessary laboratories and staff. The most thoro, complete and practical work accomplished along these lines has been done in the country by Dr. Henry A. Cotton, Medical Director of the New Jersey State Hospital at Trenton. Dr. Cotton has carried into effect on a wide scope the teachings of the pioneer investigators. In 1916, thru the work of Hastings, who had investigated the relation of infected teeth to arthritis, Cotton and his colleagues became interested in chronic sepsis as a possible causative factor in functional psychoses. In 1917 they began to have chronic infected tonsils enucleated and this operation was followed with striking success. In 1918 they were finally convinced that chronic sepsis should be eliminated in this group of patients. Accordingly, all the patients were "cleaned up" of all foci of chronic sepsis and as a result of this work they were able to increase their recoveries in this group from 37 per cent. to 85 per cent. during the first year. In the course of the year 1918 their work developed far beyond the infected teeth and tonsils. The work of Draper on the pathology of the gastrointestinal tract assumed considerable importance in the treatment of a certain percentage of cases which had distinct colon lesions. The study of the genitourinary system in the female was materially aided by the work of Arnold Sturmdorf, and his methods, as applied by Langstroth, helped to a better appreciation of the rôle of the infected cervix, in producing toxic phenomena. In fact, infected foci were searched for in various parts of the body and when found eliminated. Dr. Cotton and his coadjutors do not claim that they have completely solved the problem of mental disorders, but they do claim that they have shown conclusively that they are

dealing fundamentally with a disease of the brain tissue rather than with a disturbed mind, that they have directed the attention of psychiatrists to the physical side of the problem and they have produced clinical, pathologic and bacteriologic evidence of the soundness of their methods.

Dr. Cotton is not a staunch adherent by any means to the Freudian doctrine, altho like most honest students of mental disease he concedes that there is a good deal in it. Also, of course, he allows that emotional disturbances do have a serious effect upon the metabolism of the individual. Moreover, spontaneous recovery is not infrequently the result of change of environment and the elimination of disturbing psychogenic factors. But Cotton dissents emphatically from the theory of the influence of sexual irregularities or disturbances in the production of psychoses. These are symptoms rather than causes.

Cotton believes in the toxic etiology of a psychosis and after states his opinion that instead of considering a psychosis as a disease entity, it should be considered a symptom, and often a terminal symptom of a long-continued chronic sepsis or masked infection, the accumulating toxemia of which acts directly on the brain cells. He points out that he and his fellow workers are not announcing a new hypothesis when they speak of a toxic psychosis, as psychiatrists for years have recognized a toxic-infectious psychosis. This diagnosis was limited to patients who had an obvious infection acute in character and easily diagnosed. They have merely extended this diagnosis to include the whole so-called functional group, such as manic-depressive insanity, dementia *præcox*, paranoid condition, the psychoneuroses, etc., in which the infection is present, but not apparent or easily found on casual examination. They have found also that the mental diagnosis is of small importance in their work. Cotton does not accept Kraepelin's classification *in toto* and does not believe that there is any fundamental difference in the functional psychosis. He and his colleagues are forced to conclude that distinct disease entities in the functional group from a mental diagnosis, at least, do not exist. The etiologic factors are the same. The psychosis is modified by several factors: First, the duration of the sepsis, the severity of the

toxemia produced, plus the patient's resistance or lack of resistance to the septic processes. This latter factor may depend upon an inherited predisposition. It is known that alcohol produces different types of psychoses in different individuals. But that does not hinder psychiatrists from recognizing the various types of alcoholic insanity, or from recognizing that alcohol is a definite etiologic factor. Also another parallel exists between these two toxic factors and that is the fact that many people indulge in alcohol even to excess, without developing a psychosis.

But while these are Dr. Cotton's articles of faith he does not claim any originality for them but freely admits that he has been putting into practice on a large scale the teachings of others with the most marked success. The results from the detoxication methods practiced at Trenton have been startling. On July 11 last Dr. Cotton read a paper on chronic sepsis in mental disorders before the British Medico-Psychological Society in London which was well received and discussed among others by Dr. Chalmers Watson, Sir Frederick Mott, Dr. Graves and Dr. Goodall.

The claim that certain forms of mental disorders originate from physical causes, an autointoxication produced from infective focus or foci arising probably in the majority of cases from chronic intestinal stasis, is stated to be rapidly gaining ground in Great Britain. There is strong evidence in support of this claim. Strong clinical evidence and more will doubtless soon be forthcoming. In Great Britain immense interest is being taken in the subject and in the near future important developments may be expected in this direction.

Bogus Doctors.—Few events have created more widespread consternation than the recent exposure in Connecticut and several other States of the number of incompetent and dishonest practitioners of medicine who have been pursuing their calling thru the possession of bogus credentials. As might well be expected, the people are genuinely aroused, but it is most unfortunate as well as unfair, as the consequences of allowing ignorant, untrained and unscrupulous men to prey on the sick and suf-

fering, are being exposed, that there is a tendency to blame the qualified physicians of the country for the situation. This is most unjust, for there would be no laws protecting the public against ignorance and lack of medical education, if it were not for the graduates of reputable medical colleges, who have been largely, if not entirely, responsible for whatever steps have been taken in this country to raise medical standards and regulate medical practice.

It is a well-known fact that it has always been difficult to get our State law-makers to pass the legislation honest medical men have believed to be wise and essential. The instant any attempt has been made to secure an efficient law establishing proper standards of preliminary education and adequate qualifications for medical practice, the irregular practitioners have descended in force on our legislators, who have been only too ready to listen to their pleas that the regular, or educated, practitioners of medicine were only seeking to establish a monopoly! Never a thought have the politicians given the interests or needs of the sick. The only thing they have been able to see was the tendency of the more skilled and competent physicians to place unfair handicaps on those who wished to practice medicine as they saw fit, and make their living by treating disease in their own way, however unscientific and irrational! Every effort to raise the requirements to engage in medical practice has been fought as a selfish move on the part of the regular medical profession. But now as the results of keeping the standards low are becoming evident, the regular practitioners are being blamed for not having taken proper steps to expose the quacks and fakers, and protect the people against their machinations!

With all the force at our command we wish to state that the blame for the harm that has been done to innocent sufferers does not rest on the regular medical profession. The American Medical Association, and every state and county society, together with the reputable medical journals of the country have done their best to warn and safeguard the people. If they have not been more successful it is the fault, *first*, of the politicians who have failed to recognize the truth and do their duty, and, *second*, the deplorable ignorance of the people in regard to medical qualifications, and their readiness to

trust their dear ones as well as their own lives to fake doctors and dishonest quacks, whose incompetency should have been obvious, but whom not a few of our most intelligent men and women have endowed with miraculous powers!

The honest doctors of the land stand ready to do their full part in helping to clean up the situation, even tho this may mean hardship and inconvenience, but in the last analysis it is the people themselves, and the legislators in every state who are the only ones who can do what must be done to provide adequate protection against the wolves who are preying on the sick and afflicted of the country.

In our January issue we will take up this problem in detail. The existing conditions cannot be allowed to go on.

Prohibition and Water Supply.—The question of state control of certain health measures has an interesting light thrown upon it by the observations of Dr. William J. Mayo, especially with reference to the temperance movement that eventually developed into a national prohibition movement. Says Dr. Mayo:

"It is assumed that the drinking of spirituous and fermented liquor is due to an evil, inborn longing to be stamped out only by the exercise of individual self-control. Is this true?"

"In France and Italy the drinking of billions of gallons of wine saved the people from extinction; they could not have lived had they drank their polluted water. The Teutonic countries turned to beer to secure a sterile drink; England had ale and wine, and temperance countries, such as Turkey, had tea and coffee. Simultaneously with Vienna's introduction of a pure water supply from the mountains, her per capita consumption of spirituous and fermented liquor was reduced 40 per cent. The introduction of a pure water supply in the various states in our own country has been followed by a temperance movement and finally by prohibition."

"The drink habit is one of the many forms of individual protection resorted to by Nature to save man from filthy diseases which cause death, or that which is worse than death, intellectual deterioration."



CHRONIC INTESTINAL STASIS AND CANCER.

BY

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The subject I have chosen to discuss is one that, because of the etiologic relation it has been shown to bear to many serious diseases, is of intense interest to all humanity.

At the present day, surgery and medicine appear to be one horrible mêlée of attempts to understand and treat end-results, little or no endeavor being made to determine causes or to obviate the development of these conditions. In surgery, operations increasing in severity replace less extensive procedures; for example, in such a condition as ulcer of the stomach, while no attempt is made to remove the factors which produce the ulcer, together with many necessarily associated results, the possibility of its recurrence is only eliminated by the removal of the entire stomach. The safety with which such operations can be performed and the facility with which a surgeon can acquire sufficient skill to effect them at comparatively little risk, tend to increase the number and severity of these operations. Every one worships the god "technic" to the complete elimination of the importance of dealing with the causation and, therefore, the prevention of disease, which should be

our real object in life.

The profession is only just beginning to realize the enormous part played by the defective functioning of the gastrointestinal tract, the consequent fouling of the food supply and the poisoning and deterioration of the tissues by septic material absorbed from the intestine.

That we pay dearly for the luxury we enjoy in our food and habits of life is shown clearly by the fact that civilization brings in its train a very large number of diseased conditions which do not exist in those leading the simple life of the native. That these conditions are all due to acquired defects in the functioning of the gastrointestinal tract is, in my opinion, undoubted, since they occur at once in the native when he is placed in a civilized community, and it can be shown that these diseases bear a direct proportion to the degree of civilization enjoyed.

Roughly, the difference between the civilized and the uncivilized is a matter of diet. While the latter eat much food that is uncooked or only imperfectly cooked and which contains a large proportion of indigestible matter, the former eliminate from their meals all but the digestible. By this means the bulk of the food and its stimulating action on the intestinal wall are diminished as much as possible and the material stagnates and becomes poisonous. As evidence of these statements I will quote an extract from a lecture by a great ob-

server, Colonel McCarrison. He spent nine years in the Himalayas, during which time he had a large practice, performing more than 400 capital operations each year. During that time he never saw one case of asthenic dyspepsia or of gastric or duodenal ulcer, of appendicitis, of mucous colitis or of cancer. I would call your attention to this sequence, all of them being the sequelæ of chronic intestinal stasis, since I am certain that cancer is the last stage in the sequence, and that it never attacks a healthy organ. The diet of these people is very simple. They live chiefly on corn, ground between stones. This is made into a cake which is imperfectly roasted over a charcoal fire. They very rarely eat meat. Mr. F. L. Hoffman, the eminent American consulting statistician, writes me as follows: "Your views regarding dietary or nutritional causation (of cancer) coincide with my own, based upon extensive research among native races. I recently returned from a trip to South America, where I lived for seven months among native Indians and mixed bloods. During the entire period not a single case of cancer was brought to my attention, altho everywhere I inquired, altho every doctor was asked the question and altho I personally came in contact with more than two thousand natives. The diet is very simple and the habits of the people are very regular."

Dr. F. P. Fouche, writing in the *B. M. J.*, June 30, 1923: "For six and a half years I was district surgeon in the Orange Free State. During the whole of that period I never saw a single case of gastric or duodenal ulcer, colitis, appendicitis, or cancer in any form in a native, altho these diseases were frequently seen among the White or European population."

Dr. Bernard Hollander, writing in the *B. M. J.*, July 7, 1923: "Thirty years ago I was interested in the causation of cancer when my friend, the late Sir Henry Stanley, the African explorer, drew my attention to

the fact he had observed, that the native races thru which he had traveled were free from it. Only in coast towns, where natives mingled with Europeans, did cancer occur, then only one case in about ten or twelve years."

Dr. Dyce Sharp, writing in the *B. M. J.*, July 14, 1923, fully confirms these statements as regards Northern Nigeria and Abyssinia.

I could furnish much more evidence showing that the freedom from any of the sequences of stasis is due chiefly to diet, and to a lesser degree to the habits of these races.

Place these people in a civilized community, as in the case of the American negro, and the diseases they suffer from will be precisely those of the white man among whom they live and whose diet and habits they imitate.

I think I have proved that the primitive races while living in their normal conditions and surroundings are free from certain diseases of the gastrointestinal tract and from cancer, all of which exist widely in civilization and are apparently becoming more and more frequent. This is so obvious in the case of cancer that much attention has been drawn to this particular stage of the stasis sequence and an enormous amount of money and time has been spent in endeavoring to find the origin of cancer. The chief cause of the failure of these efforts is due to the fact that cancer is not recognized as a part of a mechanical sequence and as never affecting a healthy organ, but is regarded as a primary condition. The cancerous cell will only grow in a suitable soil and that soil is provided for by the prolonged action of toxins in the tissues.

I will now proceed to the description of the condition I called chronic intestinal stasis and will endeavor to show how it runs parallel with civilization, producing hideous misery and disease in a progressive and disastrous manner.

Many years ago, while walking over a bridge in Paris with my old friend, Moynihan, he said to me, "You have completed your work on the treatment of fractures, why do you not turn your attention to the abdomen?" That remark sank into my brain and I went up to Leeds and saw the magnificent work he was doing in the school on which Mayo Robson had shed so much luster.

On my return to London I applied to the gastrointestinal tract the same mechanical principles which I had formulated from the study of the changes which ensue in the bodies of laborers and which I had employed in the treatment of fractures. They are the following:

(1) Pressure produces changes in the structure and form of the bones and in the form and function of existing joints, while it determines the formation of new joints.

(2) Strain produces change in the form of bones, and in the form of existing joints and also produces new joints.

(3) When, apart from the exercise of pressure or strain, it is important, from the altered mechanical relationship of the individual to his surroundings, that a mechanism should be modified or an entirely new one developed, such a change takes place.

These laws show that we have a definite mechanical relationship to our surroundings and that any variation in that relationship is followed by corresponding changes in our mechanism—in other words, this is the basis of evolution. Realizing the fact that civilization, because of the variation from the diet and habits of primitive man, meant constipation or the delay in the passage of material thru' the gastrointestinal tract, I argued as to what changes would develop in the viscera and in their attachment in order to obviate as far as possible the ill effects which must otherwise ensue from the stagnation of the contents of this tract.

In the case of the large intestine to oppose

the elongation and distension of the bowel it would be advantageous to strengthen the layers of peritoneum which secure the gut to the abdominal wall.

It is the habit in civilization to regard a single formed motion a day as the normal so that the individual is habitually constipated for at least twenty-four hours, and the products of the food consumed during that period are accumulated in the large intestine and in the first instance in its termination. Therefore strain is experienced first upon the outer layer of the mesentery, which fixes the iliac colon to the floor of the fossa and this strain is greatest about the junction of the iliac and pelvic segment of the colon.

Corresponding exactly to this strain, there is developed upon the outer surface of the mesentery extending from its base, streaks or bands of peritoneum, fibrous in appearance. These spread gradually along its outer aspect and as they grow they contract and shorten this portion of the mesentery, so limiting the range of movement of the portion of intestine which it secures. Later this new growth of tissue, which is really the crystallization of lines of force, extends to the outer wall of the large bowel and gradually encroaches on its circumference. Not only does it pin the intestine immovably in the fossa, but by its progressive attachment to the bowel wall it rotates it upon its long axis and reduces its lumen very materially, and consequently obstructs the passage of fecal matter thru' it. The consistency of the contents of this portion of the intestine is usually firm and often hard, so that it is easy to realize how difficult it may be for the fecal mass to negotiate this obstruction, even when it assists only in a moderate degree. Any interference with the free functioning of this portion of the bowel is a serious obstacle to efficient drain-

age and the more marked the obstruction the greater the delay of material in the entire gastrointestinal tract proximal to it.

To this particular obstruction I gave the name of the "*First and Last Kink*," the *first* because it is the earliest to form, and the *last* because it is the lowest in the gastrointestinal tract.

I cannot exaggerate its importance, as I believe its capacity for harm is tremendous and far-reaching and that it is responsible for all the changes which are due directly and indirectly to chronic intestinal stasis. It spells the failure of civilization and is a veritable Pandora's box.

Consequent on the stagnation of material in the large bowel, similar bands develop along the mesentery, securing the convexity of the loaded colon. These are most marked in certain situations, such as the splenic flexure and, again at the end of the ileum, where it is called the ileal kink. The secondary accumulation of material in the small intestine angulates the duodeno-jejunal junction, causing, first, dilatation of the duodenum and, later, ulceration of its first portion, spasm of the pylorus, dilatation of the stomach and its ulceration along the seat of strain, namely, the lesser curvature. This ulceration of the stomach tends readily to become cancerous.

The same tendency to the development of cancer occurs in the large bowel—when angulated and obstructed by acquired bands or by spasmodic action of the sphincter ani or of Mayo's circular band of muscle—this tendency being in direct proportion to the degree of obstruction and to the increase in consistency of the feces. The stagnation of the contents of the large bowel also causes an inflammation of the appendix which is frequently anchored and obstructed by acquired adhesions of the mucous membrane of the colon producing colitis in its various

degrees and forms. The appendix is often so secured as to control the ileal effluent and to increase the stagnation of the material in the small intestine.

Besides these mechanical results of stasis, the sequence of which is quite obvious, we have those which are consequent on the fouling by organisms of the dammed-up contents of the small intestine, duodenum and even the stomach, with the extension of the infection along the hepatic and pancreatic ducts which produces gall-stones and cancer. The mode of extension of the infection in these is apparent as the mechanical changes.

The next series of changes we have to consider are those which come about by the absorption from the infected contents of the gastrointestinal tract of more toxins, etc., than the liver is able to deal with. These noxious substances getting into the circulation are carried to every organ and tissue in the body and produce disastrous results in proportion to the degree of the toxicity of the blood.

The degenerative changes in the thyroid, adrenal and other ductless glands, the heart and blood-vessels, the nervous system, the eyes and ears, the kidneys, liver, pancreas, uterus, ovaries, testes, prostate, breast, fat, skin, hair, lymphatic tissue of the nasopharynx and the gums and teeth, these last two being the most frequent and conspicuous of all, I have frequently described in detail, and I have shown how liable certain of these degenerated organs as the breast, uterus, ovary and pancreas, are to be infected with cancer.

Among the nervous symptoms may be mentioned intense headache, neuritis, neuralgia, sleeplessness, misery, complete mental and physical prostration, melancholia, epilepsy, disseminated sclerosis, delusions, dementia praecox, etc.

Besides these changes which are the direct result of the supply of toxic blood to the tissues, we have a number of infections which occur because of the inability of the degenerated tissue to withstand their inroad. These infections are all of such a nature as not to be able to obtain a foothold in a normal healthy subject.

Perhaps the most conspicuous at the present moment is cancer. *Cancer never affects a healthy organ.* In every case in which I have had an opportunity of verifying it, I have found that the cancer patient was suffering from chronic intestinal stasis and that the infection by cancer was an indirect consequence of this condition. Cancer of the skin and tongue which are produced by chronic traumation alone are not included in this category.

If this assumption is correct, it is obvious that to prevent the development of cancer it is necessary to obviate these changes which result in the gastrointestinal tract from the diet and habits of civilization. That an enormous amount of benefit and a corresponding freedom from cancer has been obtained by the use of paraffin is, in my opinion, undoubted. I started to employ paraffin when I recognized the mechanics of chronic intestinal stasis, and have used it in every case since, as it would have been impossible and unnecessary to operate on all patients suffering from this disability. Its usefulness is also confirmed by the extraordinary manner in which it has spread over the whole world. I doubt whether any other material or drug has ever given anything like the same comfort and security from disease that it has. By its use the irritation and harm which result from the action of the ordinary purgatives are avoided, while it acts on the principle of the flushing tank, rendering the motion soft

and ensuring two or three free actions a day.

The other diseases that affect the subjects of chronic intestinal stasis are rheumatoid arthritis, Still's disease, tubercle, Reynard's disease, many splenic affections, ulcerative colitis, many skin diseases, diabetes, ulcerative endocarditis, gout, etc.

Our chief interest at the present time, therefore, shall be to prevent the development of chronic intestinal stasis and so to obviate the incidence of the several conditions which are due directly or indirectly to its presence, of which latter group, cancer interests the public particularly because of its frightful mortality and the physical and mental anguish so frequently associated with it.

How is this to be done? *It can only be effected by a complete revolution in our diet and in our habits of life.* We must assimilate them to those of the natives among whom the entire stasis sequence is unknown. How this can be done with as little sacrifice to the pleasures of the table must be investigated by dietetic experts, to whom the problem should not present insuperable difficulties. It must necessarily be a compromise, but the more thoroly we approach the conditions of primitive life the more successful shall we be in avoiding the occurrence of a very great number of diseases.

Roughly, it would seem that the diet should consist as much as possible of vegetable matter, that it should be consumed largely in a raw state, to avoid damage to vitamines, that coarse indigestible material be retained in order to increase the bulk of the intestinal contents, and their stimulating action on the reflexes, that food which if kept becomes offensive and poisonous should be eliminated as much as possible and that the consistency of the feces be diminished,

and the frequency of their evacuation be increased.

So much for the prevention of stasis. As to the treatment of the existing condition, apart from medical measures such as a Curtis belt, paraffin of proper viscosity, kaolin and abdominal exercises, all operative measures on any portion of the gastrointestinal tract should be started by an examination of the last kink, and by the careful freeing of this bowel from its acquired attachment to the iliac fossa. This requires to be done thoroly and with the greatest care and when the mesentery has been restored to its normal length and the bowel to its normal freedom, *any raw surfaces of mesentery must be accurately covered by peritoneum* to obviate any recurrence.

Perhaps of all operations in surgery this procedure alone is followed by the most wonderful effect. The whole condition of the patient is transformed and he is rapidly restored to vigorous health. After all, this is not surprising since it is because of this obstruction that all the other changes in the gastrointestinal tract ensue whether mechanical or toxic.

To my surprise I have on very many occasions derived the same advantage by this simple operation that I have previously done by colectomy at a considerably greater risk. Because of the remarkable results which can be obtained by this procedure I

am anxious that its value should become recognized.

Having dealt with the last kink, the colon should be examined in its length to make sure that no secondary constriction has developed and, particularly in the region of the splenic flexure. Any acquired band found controlling the lumen of the bowel should be carefully divided and any raw surfaces deprived of peritoneum must be carefully and completely covered.

An inflamed or controlling appendix or an ileal kink should be looked for and dealt with if present.

I do not propose to discuss the surgery of ulcer of the duodenum and stomach, but I would like to state that the duodenal distension, pyloric spasm and gastric dilatation disappear very rapidly after this simple procedure. I hesitate to say what I believe to be the case of its effect upon duodenal and gastric ulcers till I have been able to confirm my views on the subject by a much larger experience, but I am convinced that the employment of the common sense measures I adopt will reduce very materially the frequency and severity of operations on the upper portion of the gastrointestinal tract, and will free the sufferer from a large number of the consequences which ensue directly and indirectly from chronic intestinal stasis and from the autointoxication which results from it.



TO MAKE YOUR RECORD TRUE.

"Four things a man must learn to do if he would make his record true:

To think, without confusion, clearly;

To love his fellowmen sincerely;

To act from honest motives purely;

To trust in God and Heaven securely."

—Ky. Med. Jour.

THE PARATHYROID GLANDS: THEIR FUNCTION AND USE IN COMMON AILMENTS.

BY

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Before considering the part which the parathyroid glands may play in pathologic processes, there are certain physiologic facts which may be recalled. It is generally held that these glands are the regulators of calcium metabolism, that they are able to deal with toxic guanidin derivatives, and that they act in conjunction with the craniocervical or parasympathetic division of the autonomic system. Their function is, therefore, opposed to that of the thyroid, pituitary and adrenals which are sympathicotrophic glands and which act in conjunction with the thoracico-lumbar or sympathetic division of the autonomic system. The metabolic balance of the body is the resultant of the balance between the sympathetic and the parasympathetic systems and their associate endocrine glands, and it has long been known that the endocrine glands are the regulators of metabolism. If then these glands regulate the metabolism of the body in health, we should naturally expect that they would have an important influence on the metabolism of abnormal health, that is to say, in disease. Further, the normal health of the body is maintained by a balance between the sympathetic and the parasympathetic systems, but it is not a function of either system in particular. Finally, we cannot conceive that such an equilibrium is a static balance; it is essentially a kinetic balance, the resultant of opposing forces, and the functions of the body can only be said to come into static equilibrium after death has occurred.

When an infective organism attacks the

body, it is obvious that there is an immediate derangement of the normal endocrine balance. The fever, tachycardia, sweating, and hyperglycemia of acute and in less degree of chronic infection, show that an overaction of the sympathetic system is taking place, and also that the parasympathetic function is relatively or absolutely submerged. Since the normal health of the body is dependent on an equilibrium of the two systems it is obvious that in order to encourage recovery from an infective state, the parasympathetic function must be increased so as to bring the respective actions of the two systems approximately to their normal relation. The thyroid is the most prominent of the sympathicotrophic glands in the reaction of the body to infection, and since the parathyroid glands are in opposition to the thyroid the reasonable method of attaining the desired equilibrium is by increasing parathyroid function.

It has been said that one function of the parathyroid glands is the regulation of calcium metabolism; if, therefore, in infection, the function of these glands becomes depressed by sympathetic overaction, we should expect to find some abnormality in the calcium metabolism of the body. Calcium loss from the body in infective states has been observed by various investigators in pneumonia, leprosy, tuberculosis, furunculosis, chronic nephritis and so forth; tetany is not infrequently observed in acute infections and in toxic conditions such as pregnancy, and the relation between calcium, tetany and parathyroid function has been firmly established; finally excessive calcium loss from the body may be produced experimentally by thyroid feeding and tetany has been recorded as the result of such treatment. But apart from an absolute loss of calcium from the body, another

disturbance of calcium metabolism has been recorded by the writer and Dr. Grove has been observed in a wide variety of diseases. It is a change in the form in which calcium circulates in the bloodstream, and therefore with which the tissues, whose function of the mechanisms of defence against diseases, are supplied. In the healthy individual the calcium of the serum after coagulation has occurred should be in a state in which it is precipitated by its chemical equivalent of ammonium oxalate; the whole amount is in what has been termed the "active state." The heated serum may, therefore, be used to cause coagulation in normal oxalated blood, and by comparing the amount of serum required with the amount of a known solution of a soluble calcium salt the calcium content of the serum may be estimated.

The following method of estimating the active calcium in the serum was devised by the writer. The procedure is divided into three parts.

1. The Oxalate Titration of the Normal Control Blood.—Solutions of ammonium oxalate are made up in decreasing strengths, commencing at about 1/600 the solvent being 0.85 per cent. NaCl solution. Blood is withdrawn from the operator's finger by puncture and is taken up in a measured pipette. Three small test tubes are set up and into each is put 50 c. mm. of blood. To each is added as rapidly as possible 20 c. mm. of the oxalate solution in decreasing concentration, *i. e.*, say 1/600, 1/700, 1/800. The minimal amount of oxalate is noted which will completely prevent clotting for 10 mins. at 37°C.

2. The Calcium Titration of Normal Oxalated Blood.—Solutions of anhydrous calcium chloride are made up in decreasing strengths commencing at 1/5000, the solvent being 0.85 per cent. NaCl solution. To a second series of three tubes containing the amounts of blood and oxalate as stated 10 c. mm. of the calcium solutions of decreasing concentration are added; an additional tube is set up containing 50 c. mm. of blood and 30 c. mm. of 0.85 per cent. NaCl solution. The tube in which coagulation is complete in the same time as in the control shows the minimal amount of calcium necessary for complete coagulation to take place in normal time.

3. The Calcium Titration of an Unknown Serum.—The serum is collected from the clot

and heated for an hour at 55°C. A series of dilutions is then made and the procedure is identical with that in 2, the serum dilutions being used instead of the known calcium dilutions. Knowing the minimal amount of calcium necessary and also the volume of serum which produces clotting in normal time, a simple calculation will give the amount of calcium in 100 c. c. of the serum.

By this method the calcium content of the serum of a series of normal male adults was estimated with the following results:

No.	Ca. mg. % serum
1.	10.72
2.	10.76
3.	10.58
4.	10.76
5.	10.78
6	10.31

These figures correspond fairly well with the results of other investigators using different methods. Hitherto healthy sera have been considered, in which all the calcium of the serum is in the active form. A fourth section of the procedure may, therefore, be added, in which the treatment of the sera of diseased subjects is considered.

4. The Titration of Active and Total Calcium in Pathologic Sera.—The active calcium is determined in exactly the same way as has been described in section 3. When this determination has been made, the residue of the serum is measured and one-sixth of its volume of N/10 NaOH is added, and the whole kept at 37°C. overnight. The soda is then neutralized by an equal volume of N/10 HCl, and the serum heated to 55°C. for an hour. The procedure of section 3 is now carried out and the amount of calcium calculated, allowance being made for the dilution of the serum. This gives the total calcium value of the serum, and by subtracting the amount of active calcium from it, the amount of calcium which is inactive or bound is obtained.

Typical results of this estimation are as follows:

Diagnosis.	Ca. mg. % Active.	serum. Bound.	Total.
Varicose ulcer.....	6.0	3.4	9.4
Varicose ulcer.....	7.2	2.7	9.9
12 hrs. after vaccine....	7.9	2.8	10.7
Duodenal ulcer	7.5	2.6	10.1
Gumma and epilepsy...	7.9	1.7	9.6
Nasal sinusitis	7.4	2.2	9.6
Chronic tonsillitis	7.7	2.2	9.9
Rheumatoid arthritis ...	7.4	1.6	9.0
Prostatic hypertrophy ..	6.6	2.4	9.0

It is, therefore, apparent that, altho the total calcium content of the serum is but little below normal, the amount of active calcium is reduced and the whole amount is not available for tissue use. Moreover, in the circulating blood a certain amount of the calcium is bound to a lipoid complex, and is required for coagulation. When clotting occurs this bound calcium is split off into the active state in the serum and is not used in the actual formation of the clot. In the blood, therefore, roughly 40 per cent. of the available calcium is concerned with coagulation and 60 per cent. is available for tissue nutrition. In such cases as those shown in Table 2 this amount is much reduced, sometimes by as much as 35 per cent., leaving only 25 per cent. available for the tissues instead of 60 per cent. The calcium necessary for coagulation is used in apparently full amount even in such cases, for the tendency to bleed in infections is rare, and it is not common in tetany where the total calcium content of the serum is very much reduced.

When this deficiency in active calcium had been established in diseased subjects, an attempt was made to rectify it by the intramuscular administration of a soluble calcium salt, and the results of this treatment are shown in Table 3.

TABLE 3.

DIAGNOSIS—VARICOSE ULCER.

Day of treatment.	Active Ca. mg. % serum.	Condition of ulcer.
0 Before treatment	4.8	
7 CaCl_2 inject. gr. i.	6.1	
15 CaCl_2 inject. gr. i.	5.4	Healing
21 CaCl_2 inject. gr. i.	8.1	Healing
29 CaCl_2 inject. gr. i.	6.1	Healing
36 Injections stopped	7.7	Healing
43 Injections stopped	8.5	Stationary
50 Injections stopped	7.7	Enlarging
57 Injections stopped	6.9	
81 Injections stopped	5.2	

Here the injections were stopped and the improvement stopped also, but even where the injections are continued in ulcerative cases complete healing is often difficult to obtain unless the calcium dosage is being continually increased. It may be noted that in these cases the oral administration of calcium salts was without effect, while thyroid therapy caused retrogression, even when combined with calcium injections.

TABLE 4.
DIAGNOSIS—VARICOSE ULCER.

Day of treatment.	Ca. mg. % serum.		Condition of ulcer.
	Bound.	Active.	Total.
Before treatment	3.4	6.0	9.4
4 CaCl_2 inject. gr. ii	3.0	6.0	9.0
15 CaCl_2 inject. gr. ii	1.3	7.0	8.3
30 CaCl_2 inject. gr. ii	0.5	9.5	10.0
43 Add thyroid gr. $2\frac{1}{2}$	—	9.9	10.0
56 Add thyroid gr. $2\frac{1}{2}$	1.0	8.6	9.6
63 Add thyroid gr. $2\frac{1}{2}$	1.8	7.7	9.5
78 Add thyroid gr. $2\frac{1}{2}$	2.1	7.7	9.8

Since the parathyroid glands are the accredited regulators of calcium metabolism, it seemed reasonable to give parathyroid therapy a trial. One-tenth of a grain daily of a preparation made by an American firm was, therefore, given, and the following is a typical effect:

TABLE 5.
DIAGNOSIS—VARICOSE ULCER.

Day of treatment.	Ca. mg. % serum.		Condition of ulcer.
	Bound.	Active.	Total.
43 Before parathyroid	1.6	8.3	9.9 Stationary
46 Parath. gr. $1/10$ from 43rd day	1.1	8.7	9.8
54 Parath. gr. $1/10$ from 43rd day	1.0	9.0	10.0 Improving
61 Parath. gr. $1/10$ from 43rd day	—	10.4	10.4 Improving
69 Parath. gr. $1/10$ from 43rd day	—	10.4	10.4 Healed

It is at once seen that the effect obtained was both more rapid and more complete than that following calcium therapy alone; clinically the ulcer was found to heal rapidly and breakdown could be prevented after healing by occasional parathyroid treatment.

Other types of chronic conditions were then investigated and similar results were obtained both as regards the calcium deficiency and the value of parathyroid therapy. Investigations by other observers have yielded similar conclusions and it has been found that parathyroid therapy is of value in such differing conditions as chronic furunculosis, varicose ulcer, rheumatoid arthritis and sprue among others. It would seem, in short, that this form of treatment

may be of benefit in any condition involving a weakening of tissue resistance by toxic agencies, but no definite curative effect has been found in malignant neoplastic conditions.

The statement which has just been made seems to claim that apart from malignancy, parathyroid therapy will cure all diseases. This is a conclusion of the unthinking, and it is to be emphatically negatived. Parathyroid substance is not a curative agency at all in the direct sense; it is a physiologic adjuvant to the normal processes of resistance to disease, and any effect it may have is thru its action on tissue metabolism, and not due to a direct action on the invading organism.

The method by which parathyroid therapy brings about its results may now be considered. It has already been pointed out that infection is met primarily by an overaction of the sympathetic nervous system and its associate glands, and from what has been said it is obvious that derangements of calcium metabolism which occur in infection are also due to the sympathetic overaction. The efficiency of the mechanisms of resistance to disease must obviously depend on the efficiency of the tissues which produce them, for while the leucocytes and the antibodies are the points of contact in the struggle between host and parasite they are produced by the tissues of the body and are in themselves only the endpoints of more fundamental processes. The calcium ion is of great importance in the economy of the body and it is to be noted that susceptibility to infection is greatest when derangement of calcium metabolism has taken place. Thus in parathyroidectomised animals there is great loss of resistance to infection; the same may be found in rickets and in diabetes, and tetany in acute and chronic toxic states is not uncommon. It is again often found that in chronic conditions the leucocyte count is lower than it should be, were the infection being actively combated. Graves noted an increase in existing purulent discharges during the use of colloidal calcium injections in chronic states, and the writer and Dr. Grove had previously noted the same thing during parathyroid therapy, as the active calcium content of the blood began to rise. In Table 6 is shown the action of parathyroid therapy upon the leucocyte count in a case of paraplegia with bedsores:

TABLE 6.
PARATHYROID THERAPY COMMENCED ON JULY 11;
ON JULY 29 THE BEDSORES WERE HEALED.

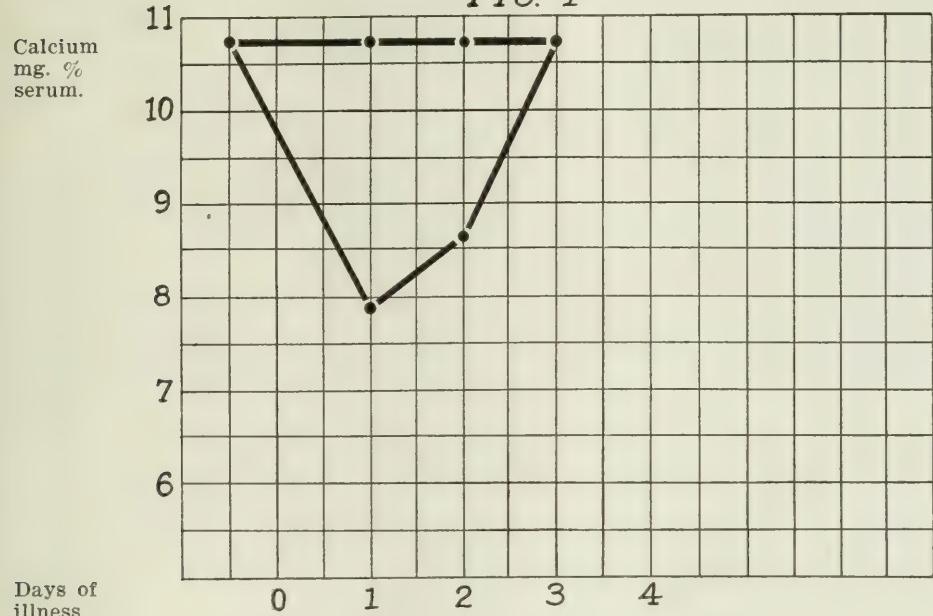
Date.	Total Leucocytes.	Polymorphs.	Lymphocytes.
July 6	9,000	5,130	3,150
July 11	10,000	6,720	3,090
July 13	17,000	13,310	3,828
July 15	16,400	12,336	3,772
July 17	15,400	10,786	3,696
July 20	18,000	13,860	3,600
July 25	18,200	14,350	3,312
July 29	16,400	12,300	3,444

The point of interest is that the leucocytosis recorded is concerned almost entirely with the polymorphonuclear leucocytes, the lymphocytes remaining almost unchanged in number. There seems, therefore, to be some relationship between calcium salts, the parathyroid glands and the production of leucocytes and it may be remembered that leucocytosis is the general means of combating disease, and is not a phenomenon specific to any particular state or organism.

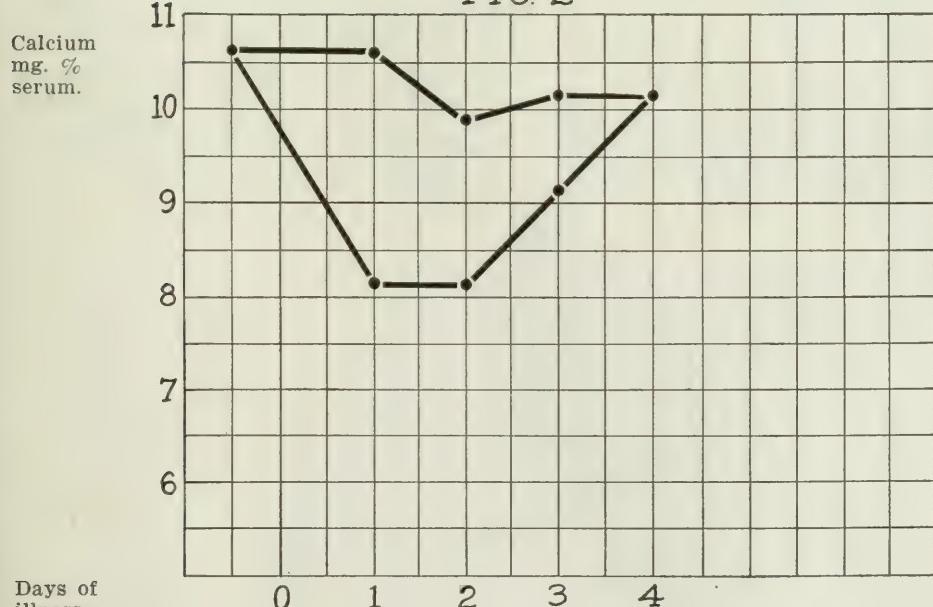
If we consider again the immediate response of the body to infection, we find, as already stated, that it is brought about by sympathetic overaction, and a somewhat similar condition tho less in degree may be brought about by thyroid feeding. The thyroid gland does not protect the body from disease in any other way except that it increases the rate of metabolism and accelerates eliminative processes. There is no experimental evidence that its activity favors antibody production, and tho a vague idea seems to have grown up that it can destroy toxic substances of bacterial origin there is no satisfactory evidence to that effect. The action of the thyroid is to accelerate metabolism, and that of the parathyroid glands to conserve tissue energy, so that when the sympathetic overacts, we get the picture of a febrile wasting disease. The two following diagrams will illustrate the effect of the sympathetic response upon the calcium of the serum. The upper line shows the total calcium content of the serum, and the lower the active calcium content. Figure 1 was obtained following the injection of a single dose of vaccine, and Figure 2 illustrates the parallel effect of a mild but acute infection. As might be expected, the results are prac-

FIG. 1

Calcium
mg. %
serum.

*FIG. 2*

Days of
illness.



tically the same; in both there was a febrile reaction and in each case there is a loss of active calcium altho the total calcium remains practically unchanged. As clinical recovery proceeds, the calcium gradually resumes its normal state. In the other cases which have been dealt with clinically, the return of the calcium to normal ran concurrently with the recovery from the particular disease. It has already been stated that the calcium content of the blood depends on the efficient function of the parathyroid glands and that it is maintained at a constant level by the equilibrium between the sympathetic and the parasympathetic systems, or in terms of endocrine glands, between the thyroid and the parathyroid glands. This balance is upset in disease; therefore, the recovery of the calcium balance must depend on the re-establishment of the normal balance between the sympathetic and the parasympathetic systems. Resistance to disease is not a function of either system in particular; it is the resultant of a normal autonomic balance, and when once this balance has been upset by disease, measures must be taken to restore it. In the past this has been done indirectly by keeping the patient at rest and by giving an adequate diet, the object being to decrease tissue-breakdown to the minimum and thereby increase the energy available for fighting the infection. But since the action of the parasympathetic system is a conservative one, recovery may be accelerated by using the old methods and in addition by direct stimulation of the parasympathetic function. This then is the secret of parathyroid therapy; it

has no direct curative action but accelerates an already existing physiologic action which has been submerged by an opposing force.

To the writer it seems doubtful whether the febrile reaction of the body to infection is of any real value beyond increasing the eliminative functions. It seems that this reaction is in the first instance an irritative one due to the effects of the bacterial toxins upon the sympathetic system, and that this irritation continues when the condition becomes chronic. Apart from the continuation of fever in chronic states, Bruning and others have concluded that trophic ulceration is a manifestation of sympathetic overaction and have on these lines successfully treated chronic ulcers by periarterial sympathectomy. Ulceration occurs mostly in chronic conditions, and in conjunction with the derangement of calcium metabolism and the occurrence of hyperglycemia it is evident that signs of sympathetic overaction are carried on when disease becomes chronic.

The body has but limited means of reacting to disease, and it reacts to all infections in a similar manner. Since, therefore, the sympathetic overaction is so constant a feature of response, irrespective either of the site of infection or of the infecting organism, it is not surprising that the re-establishment of the normal endocrine balance by parathyroid therapy has beneficial results in so many different conditions. For as normal health is the resultant of the opposing forces of the sympathetic and parasympathetic systems, so the re-establishment of normal health after it has been disturbed will depend upon the same factors.



THE MENACE OF IGNORANT HEALING CULTS.

Any healing cult, badly educated, and incapable of making a diagnosis of disease, let alone treating it, is dangerous and should be put out of business, says Black, quoted in the Western Medical Review (November, 1923). This is not jealousy on the part of the honest practitioners of medicine.. Every one of these cults makes business for the educated physician, causing more disease than they cure; they do not take food out of the honest doctor's mouth, but rather add to his revenue. The medical profession, however, has always tried to deal fairly with the public. It is trying now and will always try to abolish disease and to increase longevity. It is needless for any one to point out to what extent the profession has succeeded, but to have every step obstructed by a lot of ignorant, commercially minded advertising quacks, at times becomes so annoying, that medical men are impelled to rise and put a stop to it. Black holds they can put a stop to it.

THE PSYCHO-ANALYST AND HIS THERAPEUTIC OBJECTIVE.¹

BY

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The insanities and the psycho-neuroses are still viewed both by laymen and many medical men as strange bizarre, mysterious phenomena, if not supernatural; and the psycho-therapeutist, not to single out the psycho-analyst, as a queer, mystic sort of person, with miraculous power and knowledge—that is, if the critic is unduly impressed in a favorable way. If, however, the critic be hostile or unfriendly, then the psycho-therapeutist, and the psycho-analyst in particular, is in league with the devil, practices the black art, and closely approaches, if he be not identified with, a charlatan. It is to help clear up some of the misunderstandings in both directions, to describe the qualifications and training of a competent psycho-analyst and to indicate the nature of what he attempts to do in the process of getting the patient well, that are the objects of this paper.

The question often is asked, "Should the psycho-analyst be a physician?" In the opinion of those most competent to judge, the question should be answered in the affirmative. Not that the training in medicine *per se* as taught in our medical schools of today is especially advantageous, for far too little psycho-pathology is given in the medical curricula. It is rather the tradition and attitude unconsciously gained by the student from the teachers towards medicine and the patient, that are the priceless heritage not accessible to such laymen who suddenly blossom out as therapeutists, psycho or otherwise. This takes it for granted that some substantial general education has preceded

the medical course. Whether the physician wishes to take a general hospital training after graduating is purely optional with the individual. There is no doubt of the advantages of a psychiatric training. But that it is an essential to one who later is to do psycho-analysis is open to question. The next step in the training of the psycho-analyst is the *sine qua non*, namely, an analysis at the hands of a competent psycho-analyst. The future analyst will, in this respect, follow the course pursued by any individual who intends to take up any specialty, namely, he will choose as his teacher that analyst who in his opinion, or in the opinion of someone whose advice he asks, is the best qualified to do the training; or the future analyst will train under a man whose particular ideas most nearly coincide with his own. However, a duty, not so apparent or conscientiously fulfilled in other branches of medicine, devolves upon the psycho-analytical teacher, namely, to tell the student, after a thoro investigation, whether in the opinion of the teacher, the student is constitutionally, from the psychic point of view, fit for the work of an analyst. In the treatment of patients by psycho-analysis, frankness and honesty are demanded, no matter how painful their exercise may be. The same holds true in the case of a teacher to student. For you all know that there are physicians in the practice of various specialties for which they are not fit; and you know that there are physicians in general work, who are not competent to practice medicine.

You might ask why is an analysis necessary in the case of a physician who is to practice it. One might answer that there is no other way to learn psycho-analysis. In one important respect training in psycho-analysis differs essentially from the training in any other specialty. Any specialty, except psycho-analysis, can be taught in clinics,

¹Read at a meeting of the Yorkville Medical Society, held April 16, 1923.

on patients, in the post-mortem room. Psycho-analysis must be learned on one's self. The reason for this is that in normal as well as in the neurotic, and differing only in degree and not in kind, there exist resistances and inhibitions. In the normal, unconscious wishes of a repressed nature abound; but the repression is successful, the resistances do not interfere to an appreciable extent with his capacity to work and to obtain enjoyment; he enjoys psychic health. Unless, however, the future analyst is analyzed before undertaking the treatment of the neurotic by the method of psycho-analysis, his own psychic blind spots, which are causing him no illness mentally, will not enable him to see the disturbing elements in one suffering from a neurosis. In other fields of medicine the student uses the various sense organs to gain a convincing understanding of the work in which he is interested. To him "seeing is believing." So to the student of psycho-analysis, while he may be intellectually satisfied that unconscious mental processes exist, insofar as he learns of them from his reading and study of patients, yet in a great measure, in a convincing way, "seeing is believing" can be obtained only from the conviction that comes after a tedious self analysis by a competent analyst. Moreover, the technic of the treatment can be mastered in no better way than seeing it or rather feeling it in operation on one's self.

A few words as to the psychic make-up of the student analyst. Of prime necessity is the existence of a capacity for objective interest and work, whether latent or manifest. If latent this capacity must, thru the analysis, be made manifest, and put at the disposal of the future analyst. A certain mobility of the psychic energy is a highly desirable quality, for it insures on the part of the future analyst the ability to

maintain interest in the various activities and personalities of his patients. Tolerance, patience and understanding are qualities, the capacity for which should be present. The analysis of the student by the teacher will bring these qualities more into the foreground, and ripening experience will develop them into great aids in the treatment of his patients.

The Psycho-analyst's Therapeutic Objective.

—What is meant by a cure by means of the psycho-analytic method; in what ways does it differ from methods employing suggestion and hypnosis, and how does the cure result? These and similar questions repeatedly arise, and an attempt will be made to answer them in a brief outline, without more reference to technical material than is deemed necessary to make the subject-matter clear.

In the study of the psycho-neuroses¹ we find that there are many factors involved in their causation: Firstly, a so-called constitutional predisposition which is little influenced by therapy; next we find that early infantile experience plays an important rôle; and lastly come the precipitating causes, embraced under what Freud terms "actual deprivation or denial" under which head fall such phenomena as unfortunate "love affairs, unhappy marriages, financial and social distress, the severe demands of moral claims." It might appear from this that the satisfaction of this actual deprivation would cure the neurosis. If that were so, where is the justification for the expensive and lengthy treatment by psycho-analysis, or any other treatment for that matter? If giving full sway to one's impulses, for instance, the sexual, as is claimed by many as that which psycho-analysis recommends, is to cause a

¹This paper follows closely the presentation of the subject by Freud in the last two lectures contained in "A General Introduction to Psycho-analysis."

cure, such a cure need not be designated by any name; for if the solution of the difficulty were as simple as that, patients would not come to any one for treatment—they would find the remedy themselves. Such a conception of psycho-analysis leaves out two very important sets of phenomena: Firstly, that the symptoms of a neurosis are the result of a conflict between two sets of impulses—one originating from the ego, and the other from the pleasure-seeking elements of his personality. Full satisfaction or victory to one at the expense of the other still leaves the conflict unsolved. The second factor neglected by such as advocate full indulgence where the actual deprivation seems an outstanding feature in the causation of a neurosis, is that one set of forces, namely, the ascetic or the ego elements, are in the conscious or in the preconscious, while the libidinous are in the unconscious. In other words, the patient is contending with strivings or emotions of which, or at least some of which he is unconscious, he is, therefore, unable to cope with the situation.

It might be mentioned at this point that it is not the function of the analyst to cure a neurosis by means of advice and guidance. As a rule, the only advice given a patient is that during the course of psycho-analytic treatment, he or she make no vital step, as entering upon a marriage, business or professional enterprises, or changes of career. These should be left till the treatment has ended.¹

So far then it is apparent that a psycho-analytic cure does not consist in full indulgence of impulses, nor in the adoption on the part of the analyst of the rôle of advisor, mentor or moralist.

In essence the method of cure by means of psycho-analysis may be said to consist in the bringing into the consciousness of the

patient the heretofore unconscious components of the pathologic conflict, and give him an opportunity of finding another solution. It is in this respect that the treatment is called causal, for it goes back beyond the immediate causes of the neurosis to early childhood, fills out the amnesic gaps, seeks the occasions of the earliest repressions, frees in this way the infantile fixations, thereby putting at the disposal of the patient, for constructive purposes, energy formerly consumed in symptom formation or various defense reactions against repressions; and in repression itself it might seem at first sight that the making conscious to the patient of that which he has succeeded in repressing may result in more harm than good. But one must take into consideration that the repression or rather the failure of the repression has resulted in the neurosis. That a decided, at times alarming, reaction takes place during the process of rendering the unconscious conscious, is a matter of everyday experience, and is to be expected. The fact that the patient is suffering from his neurosis is sufficient a stimulus for him to face a little more suffering in the hope of a release from the tortures of a neurosis. Several factors aid him in accepting what he previously rejected. One is the gradual removal of the resistances which maintain the repression. The analyst points out to the patient the meaning of the various men-

¹ The reason for following this method is that strictly speaking the psycho-analytic treatment seeks to make the individual independent in his decisions; no advice is given. Frequently enough the patients seek to have the analyst make decisions for them, but except in the very young, the analyst must maintain a passive attitude. The exaction from the patients of a promise that they will make no important decisions during the course of a psycho-analysis is justified by the simple reason that a patient suffering from a severe emotional disturbance is not in a suitable condition to take any serious step, demanding cool judgment. There are other reasons for this exaction, but they are such as would demand too technical explanations, and may be omitted here.

tal phenomena. Gradually, piecemeal the past is reconstructed, and the patient is faced with the situation as it actually appears to be. All this is slowly done, and interpretations made at appropriate times. In this way both repressions and the resistances are made conscious. Another aid in the acceptance of interpretations is the fact that in the course of a psycho-analytic treatment the ego of the patient has grown more adult in that it has learned to accept that which was unacceptable before. It has become more tolerant, less ascetic. As Freud expresses it, "At that time the ego had been weak, infantile and may have had reason to denounce the claims of the libido as if they had been dangerous. Today it is strong, experienced and is supported by the assistance of the physician."

At this point, before going on to the most interesting feature of psycho-analysis, and by way of an introduction to it, it may be well to say a few words about how the giving of information of his own unconscious material enables the patient to make use of it in the cure of his symptoms. For instance, it is the rule that after a week or two, or in some few instances even in less time, the essential elements at least of the causes and the construction of a neurosis become evident to the analyst. On the face of it, it seems that since the situation is clear to the analyst, all that is necessary is to inform the patient of it, he will understand, and the cure will follow. It does happen at times that explanations given early in the treatment are accepted by the patient, with some such remarks as, "Yes, that is so, I can see that. It sounds logical." Yet in spite of the acceptance, the symptoms in relation to which the explanation was made still persist. What is the explanation for such an occurrence? Namely, this, that the resistances which maintain the repression

still remain in force. An *en-masse* explanation has been offered, and the newly-acquired knowledge remains in the consciousness of the patient, and the repressed material concerning which the information was given remains in the unconscious. It becomes evident then that knowledge concerning the unconscious material causing symptoms must be given at appropriate times. When the time is appropriate is a question determined by the analyst, depending naturally on his skill in recognizing to what an extent the resistances have been removed regarding that particular phase of the condition which at the moment is under consideration, indicating that the patient is in a condition to accept what is offered to him or of what he himself has become cognizant. Such a coincidence will result in a gaining of knowledge, the mainspring of which comes from within the patient himself, and will result in conviction, due to the coming to the conscious of that which heretofore has been unconscious.

A demonstration, it might be called, of the process by means of which, and the agency thru which, unconscious material, in the form of memories, phantasies, activities, become conscious, is that phenomenon to which reference was previously made, namely, the transference. I trust by means of the description of this to demonstrate to you something important and interesting, just as to the patient it proves novel and startling, at the same time serving as the most important agency in his cure.

Before going on with the problem of the transference, a short digression will be made in order to indicate the manner of the discovery of existence of the transference in the psycho-analytic technic. It might interest you to know that the technic of psycho-analysis is something that has developed slowly in the course of the last

twenty-five years or so. At first very little attention was paid to anything but the rapid cure of the symptoms by means of suggestion under hypnosis, aimed directly at the symptoms themselves, without any attempt at ascertaining the causes of the malady. Later when the traumatic theory had developed, all effort was made to have the patient associate in a waking state and connect the supposedly traumatic incident with the symptoms which arose in connection with it, producing in this way what Breuer and Freud called the cathartic method, or the method of abreacting the traumatic affect by living over again, in a conscious way, the forgotten elements of the trauma or psychic insult. The patients, however, persisted in bringing into the analysis material which apparently had nothing to do with their symptoms, among the material being their dreams. Freud saw the value of this apparently extraneous material and then replaced the cathartic method with its forceful suggestion, by means of the free association method, that being the method now used, and consisting in the telling by the patient of whatever thoughts are conscious to him at the moment. The assumption by the physician of a more passive attitude coupled with the free associations of the patient, allowed to the physician greater opportunity to study the patient's productions, attitudes, reactions, and general behavior during the course of the analytical sessions. Among other phenomena manifested in the course of the treatment it was noted that the physician, his personality, his entire environment, his family, his activities, etc., frequently, or rather regularly appeared as part of the patient's free associations. More important than their mere presence was the fact that the thoughts of the patient concerning the physician very definitely influenced the course of the dis-

ease; that these free associations had to be subjected to analysis and interpretation just as any other free associations the patient gave during the course of the analytic session; these free associations, and often the behavior of the patient in connection with the analyst, really gave, when their significance was recognized, the greatest insight into both the causation of the original neurosis, and the best technical instrument with which to handle it. But more of this later.

With a uniformity and regularity present in all patients suffering from the form of psycho-neuroses known as the transference neuroses, there are manifested certain typical phenomena. It was regularly observed that soon after a patient begins the treatment, the symptoms disappear, a feeling of well-being replaces the previous distress of the neurotic symptoms, and at times to the physician, and regularly to the various family members and friends—in fact, almost to any one who is willing to listen, the patient never tires of telling of the wonderful physician under whose care the patient may be at the time, singing his praises until the patient becomes a bore to his or her family. In the analytic hour or session, the patient eagerly and with an apparently increased intellectual capacity, grasps the interpretations made, and apparently strides forward toward's recovery at a rapid pace. Everything seems most favorable for a good outcome. Free associations are plentiful, and the patient shows an enthusiasm for the work that is most encouraging. Then suddenly, without any apparent reason, the whole scene changes. Some of the old symptoms return, or new symptoms appear. The elation is replaced by depression, interest in the analysis ceases, the free associations are scanty or absent; instead of singing the praises of the physician, one

hears how disillusioned the patient has become, the treatment is of no value; the analyst is reproached and decried to the degree to which before he had been praised. The patient now, instead of the warm friendliness, manifests a distinct hostility or at least shows no effort at cooperation.

Let us go back for a moment and analyze the first picture we drew. It is taken for granted that no analyst, and it is to be hoped that no physician, no matter what method of treatment, in the case of a psycho-neurosis he uses, will allow self-deception or conceit to mar his objectivity to the extent that he will take any great amount of credit to himself for the pronounced benefit the patient showed so early in the treatment. If he does, he is in a bad way when it comes to handling the second picture. The whole of the first picture is the creation of the patient, with but little that the analyst has added. The analyst might justly be said to have given the patient some psycho-analytical knowledge, but that had little or nothing to do with the coloring of the picture or the skill of its execution, tho it might serve to furnish material for the subject-matter. The analyst's part in the process will be taken up shortly.

An illustration will make the situation clearer. The patient, a girl of twenty-one, has had a disappointment in love and among other symptoms has a moderate depression; the symptoms themselves matter little, for the same results follow in any case, namely, their disappearance, as above described. The patient gives evidence, as shown in her dreams, in her devotion to the analyst, in various minor and often frank ways, of a state of mind which can in broad terms be called love.

It is to be expected that, especially in a patient, in this case a woman, ill with a neurosis, which is an emotional illness, the

exciting cause of which as you know is so often one resulting in the denial of some emotional satisfaction, as for instance in this case an unfortunate love affair, it is to be expected then, that under such circumstances the patient will develop a strong interest in the physician, especially if one takes into consideration in addition the intimate nature of the subject-matters discussed in the course of the treatment. But situations similar to the above, namely, in which actual love develops under somewhat similar circumstances, exist outside of psycho-analysis; so that psycho-analysis is not responsible for the development of this transference situation, it merely is the occasion for its making its appearance. However, psycho-analysis in this instance does what no other form of psycho-therapy does, namely, studies this transference. However, this is anticipating and therefore digressing. To return to the point where we have discovered that coincident with the disappearance of the symptoms, we have in the patient a condition comparable to love. A closer examination reveals some elements in the situation which should make us pause before dismissing it by calling it love. For instance, it makes no difference whether the analyst be young and the patient old, or *vice versa*; many other discrepancies abound to militate against a love in the ordinarily accepted meaning of the term, but the attachment of patient to physician is nevertheless present, and strong.

The outstanding feature of this situation then is the attitude of love, mixed so often with what might be termed reverence, and a ready acknowledgment of the physician's great authority. In the case of the male patient, in what has been called the positive phase of the treatment, a somewhat similar situation exists, except that the frankly erotic or sexual aspect of the attitude is not

evident. In his case there is usually an investment by the patient of the physician with a great deal of authority, to which there is willing submission. The motivating element in the rapid improvement has been the great incentive given to the work by the emotion of love evoked in the course of the treatment because of the investment by the patient of the physician with qualities which the latter does not in reality possess, but with which he has been endowed by the patient. In other words, the patient has brought to the situation of the analysis emotions from previous situations and "transferred" them to the analyst. As in so many instances previous to the entry of the patient upon a psycho-analytical cure, so also in the cure, the great incentive to work is love, and as long as the patient feels that some recognition is taken of the love expended in the work, just so long is the effort continued. What we call the negative phase of the transference is that in which just the opposite exists to that which has just been described. In this phase the patients do not cooperate, they cannot work, their symptoms return. What has brought about this change? Often it is sudden in its onset, and appears without any warning to the patient of its coming, tho the analyst can foresee it, and always expects it, for in a case carried to a successful conclusion it is always present. Before going on to describe this change in the condition of the patient it may be well to state that while it is unavoidable for the patient to transfer to the analyst it is, to say the least, very bad technic for the analyst to transfer to the patient—that is, the analyst must on all occasions preserve a passive attitude and regard practically every phenomenon on the part of the patient as something connected with the illness of the patient. Here is a favorable point to indicate the necessity for

the analyst to have been previously analyzed, so that he does not transfer too readily or to too great a degree. Since then the analyst must maintain a neutral or passive attitude to all the demands, overt or covert made by the patient, the time comes when the patient realizes the futility of her demands.¹ The following has been omitted from the MSS. "or at least the patient realizes the cause of her great improvement, and in her effort to conceal these causes, namely, the transference, because of her great guilt in regard to all things sexual, the change for the worse sets in; as much as to say, "since no love can be returned to me I shall cease to work." If you will recall it was mentioned that many neuroses begin, or have as their exciting causes an actual denial of emotional gratification or love. So here you see the same repeated in the illness during the psycho-analysis, namely, health and work as long as the stim-

¹It happens not infrequently especially in women to whom all love, everything of a sexual nature is intimately associated with a sense of guilt; in the case of women who on all occasions hide most carefully any evidence of feeling of a hetero-sexual nature; it happens that in such people the negative phase of the transference sets in as a defence against their becoming conscious of any tender feeling or erotic feeling for the analyst. The analyst can, as a rule, determine from various phenomena, the significance of which may not at all be conscious to the patient, just what is going on in the mind of the patient, and by making clear to the patient the motives for the change in her attitude to the treatment and to physician, prevent her from terminating the treatment, a step some patients resort to, to defend themselves against a conscious acknowledgment of the transference phenomena. Some patients early, but only vaguely, realize that the cause for their feeling well is due to their liking the analyst very much, and seek to break off the treatment before their "love" as they see it, becomes discovered. The decision to break off treatment is usually preceded by a return of some of the symptoms or the appearance of new ones; so that the reason the patient gives for wishing to break off treatment is not to escape from what she is regarding as an impossible situation, namely, being in "love," but from the conscious motive that the treatment is of no value, as witness the new symptoms, etc.

illus of love is present; return of symptoms when the love is denied. This is a very interesting observation, and at the same time an important one. As a rule, these two states follow each other in the order described; at times they exist simultaneously.

With the appearance of the negative or hostile phase of the psycho-analytic treatment, the treatment sets in in earnest; for so long as the progress of the condition was favorable, the rule is to keep passive and allow the nature of the condition to unfold itself in the favorable atmosphere of the positive transference, and allow the patient to transfer fully and freely. For even tho the negative phase of the transference wipes out apparently all evidence of the existence of faith and love, yet these still remain the corner-stone of the therapy, and are the final attachments to be dissolved, in establishing the full freedom of the patient from the analyst. This positive attachment is the great suggestive therapeutic agent. For as Freud so well puts it, "Inasmuch as his transference carries a positive sign, it invests the physician with authority, and is converted into faith for his communications and ideas. Faith repeats the history of its origin; it is a derivative of love and at first requires no arguments."

The capacity to transfer is present in the normal as well. In the neurotic there is evidence of its greater activity. Enthusiasm, active interests, passionate, instantaneous love (love at first sight) exist in the normal as well. We all make transferences. It would be a sad world if we did not in some measure ascribe qualities to people which they did not actually possess. The neurotic does it to a greater degree. The suggestibility of the average individual is an evidence of transference. In hypnotism the transference is the active agent, and not the

hypnotist.¹

So then it seems that the great therapeutic value of psycho-analysis rests after all on suggestion. It seems fair to infer so much from what has just been said. It has been said by critics of psycho-analysis that its therapeutic effects depend on suggestion. This is a criticism, as Freud points out, which cannot be lightly waived aside, for it has in it something of truth, for the results of analysis depend essentially on the transference, and in the positive phase of it, it is love, to put it broadly, that is the incentive to work.

In suggestive therapy,² the physician exerts his authority and influence directly to counteract the symptoms, to deny their existence or to minimize them. The method is simple, often rapid, easy for the patient, very monotonous and uninteresting for the physician, for whom it is nothing but a repetition of a monotonous formula. The results are very uncertain. The physician studies little of the motives of the illness, or of its mechanism. These remain hidden, covered over. Moreover, the patient becomes more and more dependent upon the physician, to whom the former returns, so to speak, for repeated doses of the treatment, as if for a narcotic. The physician using suggestion in its various forms is not aware of the impulses in the neurotic responsible for the latter's amenability to the suggestive therapy. The hypnotist or suggestor believes that he is helping the patient, without knowing that

¹For more detailed discussion of this matter, the reader is referred to "Contributions to Psycho-analysis," S. Ferenczi, translated by Ernest Jones; chap. 2, "Introjection and Transference."

²No very complete differentiation between direct suggestion as employed in conscious suggestive therapy, and the suggestion insofar as it forms an active agent in psycho-analytic therapy, is here attempted. Only the more salient features of the two situations are here differentiated, and only in brief.

in essence the suggestibility of the patient is responsible for the results.

Psycho-analytical treatment on the contrary seeks to lay bare the causes of the illness, and to remove them. It does not leave the patient inactive in the agency of his cure. It attacks the illness close to its source, in the conflicts from which it arose. It makes use of suggestion to influence a solution of the conflicts. Important changes in the inner psychic life of the patient are brought about, "the psychic life is brought to a higher level of development and remains protected against new possibilities of disease. The work of overcoming resistances is the fundamental task of the analytical cure. The patient must take it on himself to do this, while the physician with the aid of suggestion, makes it possible for him to do so. Suggestion works in the nature of an education. We are justified in saying that analytic treatment is an after-education."¹

In psycho-analysis we work with the transference itself; we can control the suggestion, we constantly investigate it, we know what the patient is going thru as a result of the suggestion. You have heard that a cure is brought about by making conscious to the patient the causes of his illness, by removing his repressions, by clearing up his amnesias; now it frequently happens that in spite of the disappearance of the symptoms the patient is making no headway in the direction of a real cure as above outlined; we then purposely mar the positive phase of the transference, even at the risk of a temporary upset in order to stimulate work towards the ultimate goal.² In direct suggestion the physician rests content as long as the symptoms are in abey-

ance. In analysis the transference is always under consideration, in both its negative and positive phases. Its effect upon the patient is always brought to his attention. At the end of the analytical treatment the transference must always be thoroly conscious to the patient so that its influence may be abolished; it is in this way that the patient establishes his independence of the analyst.

Summary.—As is known, the neurotic, because of his illness, shows great diminution in activity in two directions, namely, in his capacity to enjoy himself, and to work. The former is due to his emotions (*libido*) not being directed to real objects, and the second to the fact that the energy ordinarily at the disposal of the ego for work is occupied in a defense against the dangers of these emotions, in keeping them repressed. By removing the conflicts between *ego* and *libido*, the result is achieved. One must first ascertain what has become of the patient's libidinous energy. That we know is occupied in the symptoms, which we have called

¹What at first sight may appear a rapid cure is not always the best thing for the patient, for it diminishes as a rule the patient's effort in the direction of cure, and may even lead the patient to stop treatment under the misapprehension that a cure has resulted. An illustration from another field of medicine may serve to make this clear. For instance, it not infrequently happens that a case of tuberculosis, under better hygienic and economic conditions, may show rapid improvement, as for instance rapid increase in weight, diminution of cough, etc., thereby raising false hopes in the patient, inasmuch as the physical signs may still show an active lesion; the patient, however, mistaking the improvement for a cure, may decide to relax the hygienic rules, and thereby endanger the prognosis. For this reason rapid improvement in a neurosis under treatment of itself is no great desideratum, and as the text states, under certain circumstances this feeling of well-being is purposely marred by the analyst in order to stimulate work on the part of the patient; that is work in the analysis proper that will lead to removal of resistance; much the same as what will happen in the patient with tuberculosis, above instanced, namely, when his symptoms return on his having relaxed in his hygienic measures, he returns to a stricter régime.

²Freud. "Introduction to Psycho-analysis," English translation, last two lectures in the series.

substitute gratifications. The work of the cure then consists in making this energy acceptable to the ego. It is only in part that this can be accomplished by tracing to their sources the repressions and conflicts, which made the symptom formation possible. The agency of the transference in bringing about a cure can now be seen. You will recall that the transference (the positive phase, *i. e.*, what may broadly be termed the love of patient for the analyst) resulted in a rapid cure of the symptoms, just as the negative phase (what may be described as the withdrawal of this love by patient from the analyst, with consequent hostility) resulted in the formation of new symptoms, or in the return of some of the old. A new neurosis has come into being of which one might say the analyst is the cause. This neurosis on investigation is a "new edition" of the old, just as are so many other phenomena which appear in the course of the treatment in reference to the analyst. The cure of the original neurosis takes place by means of the cure of that which came into being in reference to the analyst, for while the patient tends to re-enact in the present what he has gone thru in the past, the weight of evidence compels him "to come to a different decision." As Freud¹ so well puts it, the transference becomes the battlefield on which all the forces are to meet. The emotions directed towards the analyst, trans-

ferred to him as we say, are replicas of the past; they are made conscious to the patient by removing the repressions which have kept them in the unconscious. The patient becomes aware in the full sense, of the nature of the attachment to the analyst, by the resolution of his conflict with the analyst, and gradually the physician, instead of the inordinately revered, loved or hated individual, as the case may be, emerges in the consciousness of the patient as a real, and not a fantasied object, such as he was to the patient before. With this process the symptoms produced in the neurosis (that is in the transference) disappear; a growth of the ego results, it is ready to accept newly-released energy for sublimation, in the form of work and enjoyment. Impulses previously repressed are now no longer repressed. Similarly with the symptoms of the original neurosis, and the emotions released by the analysis from the early childhood fixations. The neurosis had caused a disintegration of the psyche. The analysis separated the pathologic combinations, producing finally a psychic synthesis, by the acceptance of the ego of the repressed impulses, wishes, etc., as sources of energy available for constructive purposes, in the form of work and enjoyment, which means a cure. The more nearly the actual results coincide with this theoretical concept, the more ideal the results.

¹Freud, loc. cit.

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RESPONSIBILITY FOR TEACHING HEALTH TO OUR CHILDREN.

"In carrying forward a program of health education, the school becomes organized to do for the child what was formerly done in the home. In this field the school takes over parental responsibilities in precisely the same way that it has in the field of household and industrial arts."—Jesse Feiring Williams, *Hygeia*, September, 1923.

SOME CONSIDERATIONS OF THE THORO ELIMINATION OF FOCAL INFECTION.¹

BY

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Examinations of people of all ages of life in health or disease reveal the astounding fact that focal infection is an almost universal condition disclosing itself in disease of varying degrees of virulence or magnitude. The aggressively healthy individual is the exception.

While serving with the National War Work Council, 1918-1919, it was found that each man thought he had had his teeth cleaned before coming to New York. The fact that we had to send 95 per cent. out for more cleaning reveals a very significant condition. Not more than 2 per cent. of these men would today be passed as having a clean mouth by the Institute of Oratology. It was necessary to have men in Europe as soon as possible in those strenuous days.

In the varying stages of focal infection one may find pathologic conditions in the sinuses of the head, jaws, tonsils, gall-bladder or duct, duodenum, appendix, large and small intestines, mesenteric glands and the colon. The effects of focal infection may be found in the liver, kidney, heart, stomach, intestines, mesentery glands and the lymph glands. To successfully and thoroly overpower the focal infectious cycle, a particularly broad and comprehensive knowledge of the forces of life or biology and pathology or disease is necessary. The dentist or oral surgeon surgically removes two or three infected teeth, the patient mak-

ing an epochal recovery. Why no recovery or improvement in many others?

The technic I will describe this evening is used in all degrees of infection, but I have in mind chiefly that group known as the chronically sick where such diagnosis as rheumatism, chronic colds, lumbago, etc.; neuritis, headaches, neuralgia, functional nerve disturbances, tic douloureux and various nerve disorders; constipation, cholecystitis, gastric ulcer and the allied intestinal group of effects; deafness, loss of sight, chronic bronchitis, nasal catarrh and asthma; kidney, liver and heart lesions have been made. In some of these cases there may be complications such as specific blood diseases, false growths or tubercular conditions. This paper will not deal with these complications, as we have time only for a general discussion of the thoro elimination of the focal infection cycle.

Diagnosis, is undoubtedly the most important angle of this work. In diagnosis it is important to determine whether bacteria, even in the minutest quantity, has falsely passed thru the lining membrane of the alimentary canal and entered into contact with the blood or lymph anywhere thruout the alimentary canal from the nose and mouth to the anus. The study of patients' history and general symptoms is of greatest importance.¹

Before any oral or tonsil surgery is performed it is advisable to have the gastro-enterologist's diagnosis of patients. The intestines are built to eliminate bacteria and the force of peristalsis is so much less than the force of mastication that by the law of scientific bacterial elimination one is forced to recognize the mouth as of first importance. No section of the alimentary

¹Read before the Eastern Dental Society in Philadelphia, Pa., April 19, 1923.

¹For more complete diagnostic work, would refer to synopsis of papers published recently in *Dental Facts*.

tract is so easy for bacterial trespassing to contaminate blood and lymph as around the necks of teeth when tartar or plaque deposits have broken down the natural defenses. There are many problems yet to be solved in scientifically establishing these facts as truths. Consequently, we go out of medical studies into the sphere of Nature's life, therein realizing the relationship and the cycle between the plant and animal life kingdom.

There are two self-evident facts which must be firmly fixed as scientific truths. First, health and life are continued in the human body by the power of two forces—prophylaxis or cleanliness and immunity or the work of the antigens of the blood and lymph. Second, the human cell reproduces and functions indefinitely unless interfered with or overcome by the force of bacteria or their toxins. A study of Nature teaches that cleanliness is of first or greatest importance. We have in the sun's ray the greatest germ killer; the rain, the purifier of the air; the ocean transforms various forms of life; the soil is used in this complex transformation, various forms of plant life produce oxygen. Therefore, in our present state of bacterial knowledge it must be conceded that the forces of prophylaxis are of greater value to life than the forces of immunity. It is conceded that in certain forms of disease autogenous vaccine or the forces of immunity will save life largely because the force of prophylaxis has been either neglected or ignored.

A thoro study of the chronically sick will reveal the fact that in a large percentage of cases a goodly number of the laws of prophylaxis have been repeatedly violated. Recent medical literature and internal medicine symposiums disclose an astounding condition of the aggregate medical mind. Symposiums held in various parts of the country

have considered the following factors the important consideration in diagnosis and treatment of many of the present hidden diseases; surgery, laboratory findings, *materia medica*, autosuggestion, electro- or physio-therapy and autogenous vaccines are all mentioned. *But once* only, and that in a feeble way has the force of prophylaxis been mentioned as one of the considerations in bringing the sick back to health. Nothing in *materia medica* is quite so valuable to the chronically or acutely sick as the clean blood stream. Many may say that this is entirely outside the field of an oral surgeon, but is this not one of our profession's present weaknesses? The mouth and what enters the mouth are among the most important factors in life. Because humanity has created a demand for certain forms of dental services, is no reason why those who have been given the mouth to care for should not coordinate and correlate all the factors involving mouth pathology and health conditions. Many years ago I felt that this coordination and correlation was entirely out of my sphere, but some epoch-making and inspiring results coupled with as many defeats led me to further study and to go deeper into research —taking a course in the nose and throat section of a large metropolitan hospital and college to become a nose and throat specialist, not that I wanted to practice on these parts, but I wanted to know the truth. The necessity of medical and dental cooperation was brought home and deeply appreciated and I want to publicly thank Professor A. J. Huey for his able and conscientious teaching and cooperation.

James Ewing, M. D., Professor of Pathology, Cornell University, in a statement published by the New York State Board of Health says that "The mouth, bacteriologically considered, is the dirtiest

cavity of the body." The mouth is the germ incubator, the nose the most wonderful filter ever constructed, the throat the common passage for all. Nature has placed adjacent to these three areas the means of a healthy life, but largely thru ignorance and indifference humanity and the professions have never fully appreciated the great value of the proper development and prophylaxis of these parts. Allow me to call to your attention the work of your past fellow townsman, Dr. Cryer, whose work and writings have been such an inspiration.

The presence of specific blood diseases should be determined by thoro blood examination if any such condition is suspected previous to any operation. In the routine examination of our patients at the Institute we have eliminated the ordinary blood tests. In some cases we make a white blood cell count. We have come to this conclusion only after thousands of blood tests failed to give us any lead or information of value. I am very much interested in the reports of Dr. Torrens, of Chicago, as to his blood findings.

All patients should be examined in the nose and throat department before any oral or antral diagnosis is given. This is of prime importance because of the prevalence of sinus infection and second because of the necessity for deep study of the etiology of maxillary sinusitis. As you all know, rhinologists have been taught that a large amount of the infection of the antra is the result of droppings from the frontal and ethmoidal cells. There is the widest difference in antra diagnosis, surgery and after-treatment technic. It is also an acknowledged fact that the surgery for the elimination of chronic infection of the antra is not altogether satisfactory to our leading rhinologists. We have been able to secure definite results for our patients largely because

of our antra diagnosis, surgery, after-elimination technic and the correlation of all human efforts to obtain a clean bloodstream. Results by rhinologists' methods of antra infection elimination could not be obtained so it became necessary to work out a new diagnostic method, surgery and after-technic. I have come to the firm conclusion that the sinuses of the head are an integral part of the lymph system. To eliminate or reduce focal infection to a negligible part in the human system it is absolutely necessary that a standardized diagnosis, surgery and after-technic of the antra and oral cavity be studied and adopted. It is almost universally conceded that infected tonsils be removed. Removal of infection from the tonsils by X-ray application may be partially successful in the hands of the few, but the large majority resort to surgery.

Prophylaxis for infected tonsils has been tried in many cases by the writer, but without very encouraging results. Patients over 35 show no cures. Surgery is the only help. In certain types of patients, where real cooperation in right living can be obtained, tonsils have been allowed to stay. At a future day I will give the results of these prophylactic efforts. The tonsils of some patients are removed before any oral or antral surgery is attempted. Various factors must be taken into consideration and each case handled in the manner deemed best by the diagnostician.

An examination of present medical literature reveals that rhinologists are hard at work upon the antra elimination problem. It also reveals the fact that there is no well-defined unity of thought. There is today a group who are advocating the epithelialization of the antra in these chronically infectious cases. To this group I might say that if the infectious condition has traveled

into the marrow of the bone of the antra and it has in many chronic cases, the epithelialization of the antrum will not eradicate the chronic sinusitis or focal infection. It is my candid opinion that the problem of chronic diseases of the antra can be much more readily solved if the etiology of the disease can be determined. Is it infection due to tooth or maxillary bone conditions, or is it because of the supposed drippings from the cells above?

I have opened some 550 antra and in no case has this been done without definitely determining as to the etiology of the pathology. In the majority of these cases rhinologists have been associated either in the diagnosis or surgery of the case. In all cases but one it could be definitely established that the antrum was infected because of maxillary bone or tooth infection. In four cases there were histories of children's diseases such as scarlet fever or diphtheria settling in the ethmoid cells and becoming a contributing factor to this condition. These contributing factors had never been diagnosed or appreciated in any of their previous examinations. Many of the symptoms of ethmoid or frontal infections never come to light until after the oral and antral opening operation and a few days of the after-technic and prophylactic process has taken place. To rely upon one angle or one operation for the removing of tangible causes of focal infection, chronic type, is to insure failure in a very large number of cases. At least a cure or an improvement from extraction of teeth may be only temporary. Thousands have had teeth extracted, secured no benefits and as a result the average professional man is consequently calling the extraction of dead teeth "the passing of a fad." Every harmonized effort should be made to lower the bacterial count of the alimentary canal

and also change the flora of the entire tube. Adopt the slogan "A clean mouth promotes good health" and practice in the mouth with that basis, it is a firm foundation, will broaden the value of your services and educate humanity to properly appreciate the importance of the mouth.

The patient's mouth and throat should be *thoroughly* cleaned before operation; teeth given a prophylactic cleaning; the throat sprayed with either normal saline solution or para-toluene-sodium-sulpho-chloramide and in some cases the tonsils painted with iodagol or 10 per cent. argyrol. Especial attention should be given to the interstitial spaces of all posterior teeth. If there are any poorly fitted gold crowns in the mouth remove them immediately. Every precaution must be taken to lessen the bacterial development in the mouth. Large amalgam fillings must be polished, overhanging edges removed, bridges that cannot be kept clean removed. Everything in the mouth must be subordinated to a recognition of the importance of the lowest bacterial development possible. Some patients will have to be required to gargle and hold mouthfuls of para-toluene-sodium-sulpho-chloramide solutions for a period of thirty minutes.

The secret of success for the restoration and normal functioning of the diseased part depends upon the thorough removal of all infected tissue in the area of your operation. I do not suture completely the field of operation. In oral and antral surgery have adopted a modified form of the Carrel-Dakin technic for the after-elimination of bacteria from the operative field and throat. This requires that certain openings or drains be maintained for a period of ten to fourteen days, depending entirely upon the amount of exposed tissue, the position of the field of operation and the cooperation of the patient. Iodoform or chlorazene

gauze is used to maintain the drain openings, but only as tents, not packings. Before the patient retires, the day of the operation, a large dose of castor oil administered will assist materially in the general clearing out. The water intake should be increased according to the past water intake and the internal pathology of the patient. If an antrum has been opened, 10 per cent. solution of argyrol dropped in the eye and nose alternately before retiring each night is useful. Patient should be allowed to eat nothing more than day unless it is some orange juice or a small quantity of some laxative fruits. Patients are thoroly instructed as to their future diet after an operation. No meats, fish or chicken, no white sugar, no white flour, no eggs unless specially directed and then only raw; in other words, the less food eaten, the better. All patients should be instructed to drink at least ten glasses of water per day. If there is any food taken the mouth and throat are immediately cleansed by means of toothbrush or cotton rolls, normal saline or para-toluene-sodium-sulpho-chloramide solutions. The field of the operation, the mouth and throat, is kept as near aseptic as humanly possible. If a movement of the bowels is not obtained the next day enemas are immediately resorted to. Alophen pills, warm soapsuds or oil enemas, light massage or exercises are all used in varying cases to bring about a normal functioning of the bowels. This after-operation technic is the very important part of all your work and involves creating such a tremendous suction pressure upon the lymph stream following the operation, that supremacy is quickly given to the leukocytes or the white blood cells in the battle of nature *versus* disease which starts immediately after the operation. (Hypo-syringe example.)

You will readily recognize that the thoro cooperation of the patient is most necessary in all this work. We have made it a rule never to operate upon a patient unless he or she agrees to carry on in all the necessary post-operative technic. Their systems have become so impregnated with infectious material, the lymph glands, the liver and kidneys overloaded, the alimentary canal overloaded and in some cases the mesenteric glands three times their normal size; the large and small intestines held down by all kinds of adhesions and obstructions, and sometimes an absolute break of the lining membrane allowing bacteria to leak thru. How can any single operation or short period of rest overcome years of pathology?

It is well to avoid the use of sedatives after or before an operation because of unfavorable effects upon colon elimination. If there is pain within the body there is a reason for it. We desire the cooperation of all Nature's signals. With the described technic, pain is the result of an overpowering bacterial force at the point indicated.

Years ago efforts were made to adopt the Carrel-Dakin method in all oral and antral surgery. After trying this for many months we were forced to recognize that the desired bacterial elimination was not accomplished by these methods. Consequently, the patient starts what we have termed a soaking process, three hours after being operated upon, it being the purpose of this soaking or washing process to eliminate bacteria from these tissues or cavities as much as is possible. The following substances are used in this technic: Normal saline solution, para-toluene-sodium-sulpho-chloramide solution, iodine and glycerine (equal parts), iodagol dressing and sometimes chlorazene cream paste. Patient holding desired solution in mouth or antrum for

a period of two or three minutes, washing operative field, mouth or gargling throat, is called soaking. The length of soaking treatments varies from fifteen to ninety minutes, according to time after operation, general condition of patient, condition of operative field, presence of pain, tongue indication as to tract elimination, amount of sinus discharge, condition of antrum as indicated to sense of touch on application of cotton wound applicators.

It is essential that the patient be kept restful and secure at least eight hours of sound sleep each day if possible. In some cases of long standing infection, this may be impossible. To secure sleep, the patient indulges in certain exercises in the open air to bring about fatigue. Should the patient not be able to sleep, every effort is made to find and remove the cause of sleeplessness. Iodagol dressing has a very soothing effect. It does not irritate unless dropped in eye and many times will stop all kinds of pain. This result is accomplished by the iodine and ethyl chlorid therein. No other iodine combination has ever produced such remarkable results as iodagol dressing and I have tried a great number. Very rarely is an opiate or morphine administered. The objections to the use of these are that they have time and time again upset the thoro functioning of the elimination of the bowel contents.

Sometimes the tents in the drains can be removed within twenty-four hours, then again not until the second day. The condition of the individual as indicated by the fibrinogen of the blood, area of operation, presence of pain or swelling are determining factors as to the time of after-treatments. If sutures are used, they are removed either on the second, fourth or fifth day after the operation, determining upon the strain and how the uniting of the tissues have taken

place. The field of operation will have an uneventful recovery if the elimination of infectious tissue has been complete, irrespective of what part of the mouth the operation has been upon. If there has been the slightest particle of infection allowed to remain in the antrum, there will continue to be discharge and non-healing of the gums. If this infection is slight and in the lining membrane or soft tissue of the sinuses and the patient healthy, it may be eradicated by the prescribed after-technic. If the minutest particle of infection is allowed to remain in the bone, no amount of after-treatment will eliminate the pathologic process. In these cases, it is necessary to re-operate, removing all infected bone. The sooner this is done, the better, as the patient does not have the long drawn-out experience of many treatments, washings and soakings. To assist in his elimination of residual tissue infection of the sinuses, use the following external aids: applications of warm camphorated oil, massage, hot and cold applications, boric acid and 10% argyrol solution in the eyes or nose depending upon conditions. In some cases, it becomes necessary to remove the lower portion of the middle turbinate bone. In a number of chronic cases, we have found this bone badly infected. As soon as the patient is physically capable, we start the educational campaign of right living. Then the great value of massage and osteopathic treatment follows.

As the process of bacterial elimination gathers momentum and the patient's functioning becomes normal, we give certain exercises or hydro-therapy, electric baths, massage, deep breathing and traction-couch manipulations. The last are entirely guided by the response of the patient to the treatments preceding and the known type of pathology involved. For instance, no hy-

dro-therapy involving moist heat or extensive exercises are given in heart lesion cases. Dry heat, skin and sebaceous glands stimulation is given in all kidney and heart lesion cases. Liver cases are handled almost entirely by special diet which we have found most effective.

Patients where the lining and muscle wall of the intestines are suspected of being ruptured are kept on a raw food and light diet until such time as an exploratory laparotomy can be made. Should this examination reveal a pathologic condition in the gall-bladder or duct, intestine or colon the necessary surgery is immediately performed. In some female patients, the ovaries or cervix are infected and require immediate surgery. This work of course is entirely in the hands of the gastroenterologist.

In this life extension work, there must be thoro cooperation of all the staff and the patient for bacterial elimination. Failures are due largely to three reasons: patient too far gone in disease, patient does not cooperate in prophylactic measures, failure by outside professional practitioners to realize the value of prophylaxis or the introduction of disturbing *materia medica* or some vaccine treatment.

An aurist, dentist, rhinologist, or ophthalmologist can definitely determine his pathology, therapy and the result of his treatments. The closeness of the focal center to the sense centers undoubtedly aids more readily in the spectacular results. The internist, gastroenterologist or gynecologist may be inclined to deny the focal infection theory because of the difficulties of the study of the etiology of their special pathology, but more thoro cooperation with an oralist will greatly aid in the general recognition of the theory and the great value of prophylaxis in the treatment of this group of diseases. I refer you to that

paper, "Oral Surgery, a Department of Gastro-Enterology" by George Reese Satterlee, M. D., published in *N. Y. Medical Review and Dental Digest*.

Necessarily, this paper is incomplete. There is so much that can be said and written about the thoro elimination of the infectious conditions of the internal organs, that I feel I would put you all to sleep. Suffice it to say, that each case must be treated as a law unto itself, for many times your first diagnosis may indicate one internal organ affected while a week or two after the operation, you may find an entirely different pathologic condition than was suspected. The slides I will show later, will demonstrate first, the utter inability of making a proper oral or antral diagnosis simply from radiograms; second, some of the outstanding case histories; third, the value of thoroughness. The pathologic specimens exhibited here tonight, I trust will show you: First, that oral and antral diagnosis has great value in all health work; second, that the laws of Nature are greater than your likes or the patient's likes; third, that bacteria should not be forced into one's blood by the force of mastication, if the dental profession is interested in the health of the people.

Recapitulation.—A thoro oral and antral diagnosis should be first obtained. Proper correlation of all professional work, appreciating the two truths, the power of the prophylactic and immunizing force. The human cell reproduces and functions indefinitely unless interfered with by bacteria.

A clean blood stream one of the patient's best aids.

The orderly process of Nature is more valuable than either guesswork, custom or our undeveloped appreciation of its helpful cooperation. Cooperation of patient is most necessary.

Importance of tract prophylaxis and pure blood-building diet.

Pain after operation is nature's signal for increased prophylactic effort.

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LIME FIXATION IN TUBERCULOSIS BY MEANS OF ORGANOThERAPY.

BY

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Perhaps the most perennially interesting problem in tuberculosis concerns "lime starvation," and many clinical and laboratory papers inform us that it is an outstanding metabolic irregularity in this disease. In fact, much of the stimulus for the study of calcium deficiency has come about by the importance of this factor in the various tuberculous diseases.

We may take it for granted for the purposes of this paper, at least, that calcium deficiency is so common in tuberculosis that some form of calcium replacement deserves to be a part of the routine treatment of this disease.

There are many recalcifying methods to which attention might be drawn. For instance, we are told that the North American Indians appreciated the importance of a lime ration, and that they carefully saved the bones of fish and small animals, ground them into a powder and added this to their food. Even in these days certain manufacturers, especially in France, are emphasizing the subject and offer preparations made from bones or oyster shells which are supposed to purvey to the organism an additional amount of the much-needed calcium.

Still other pharmacologists recommend a

more direct and larger dosage of calcium in the form of various salts administered intravenously; and quite recently an organic form of calcium, Afenil (chlorcalcium carbamide), has been recommended for intravenous use. The ordinary doctor, by advising the addition of an extra quart or two of milk to the daily diet, is thereby supplying several normal days' rations of lime; for it has been found that 20 ounces of fresh milk contains a full day's lime ration for an individual of average weight.

The big idea heretofore has been to stress the importance of lime starvation and its treatment by *replacement measures*. In this paper it is proposed to consider the matter from another angle, *calcium fixation*, by means of organotherapy; and I think I can show that it is an advance both in reason as well as in reality.

Attention must be briefly called here to the epoch-making developments following the original work of Dr. H. W. C. Vines of the University of Cambridge, who showed that a remarkable reduction in blood calcium was found in a number of cases of ulceration, chiefly of the leg. Without going into the details of the matter which have been discussed in other papers, Vines' success was brought about in connection with a quite uniform re-establishment of the blood calcium by *parathyroid therapy*, and it was noted that as the lime content of the tissues was increased, healing was hastened in the actual ulceration with final cure. A satisfactory outcome in a large percentage of cases has decided the value of the idea, the more especially since many of the ulcers had been resistant to all other forms of treatment for years.

Further development of this idea has shown that other forms of ulceration, in-

cluding both gastric and duodenal, the intestinal ulceration of such protozoal alimentary disorders as sprue, and even such ordinary clinical ulcerative conditions as otitis media, are practically always associated with a reduction in the blood calcium. And to make the matter unusually interesting, a sufficiently large percentage have been cured by the reestablishment of blood calcium normality by the oral administration of as little as $\frac{1}{5}$ grain a day of dried parathyroid gland.

In view of this, and the evidence is almost incontrovertible; it seems well worth while to renew our interest in lime in tuberculosis; and with the foregoing suggestions in mind, to attempt to change the calcium status in another way. Heretofore, knowing that the blood calcium is reduced, we have attempted to augment it, or replace it; but it is evident that neglect of the important factor of calcium fixation has limited our success.

It is quite evident that in certain types of disease, especially where ulceration of various localities is a part of the syndrome, an important factor of the accompanying deranged physiology, is the removal of a factor which holds the calcium fast. Just such a substance—I have previously called it a "calcium mordant"—is produced by the parathyroid glands, and if we remove them the calcium is lost to such a degree that the animal dies in tetany. Furthermore, that the administration of lime, usually by intravenous injection, postpones the fatal outcome due to the parathyroid insufficiency.

This work, originated by MacCallum and Voegtlin in 1909, has been supplemented by several writers, and without recounting the reports in the literature, which have culminated in a splendid recent article by Professor Salvesen of the University of Christiania, we can say in this last writer's words, that when the parathyroid glands

are removed or parathyroid functioning is interfered with "the calcium fairly leaks away," and a very large percentage of it—Salvesen says 90 per cent.—is eliminated thru the bowel.

Now, just as the dyer must use a mordant to prevent his color from running, so the body requires, in its normal physiology, something which prevents the calcium from being eliminated as a mineral waste product. Likewise also in pathologic physiology we may attempt to supplement this mordant influence.

The evidence is conclusive that the parathyroids assist in calcium fixation and following a period of oral parathyroid therapy not only is the reduced blood calcium increased with the losses varying from 30 per cent. to as much as 75 per cent. restored, but with this laboratory change there is coincident clinical betterment in the actual ulceration. It is, indeed, a most remarkable development in organotherapy practice.

I submit that, as a result of this work, a new aspect of the study and treatment of tuberculosis has been opened up. Granting that the foregoing remarks are fairly close to the truth, if lime starvation is an important thing in tuberculosis and parathyroid therapy has been of advantage in increasing a subnormal body calcium with associate betterment of ulceration, why not reconsider the calcium aspects of tuberculosis and use a tested calcium mordant like parathyroid to favor the conditions in the tuberculous patient?

The matter undoubtedly will receive wide consideration, and I should be very glad indeed to be put in touch with any physician who is in a position to consider this matter from a clinical and laboratory standpoint, and if possible to be of service in developing the matter from every standpoint.

INTESTINAL AUTOTOXEMIA AND CONSTIPATION.

BY

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Gastrointestinal autotoxemia is the absorption from one or more foci in the gastrointestinal tract into the circulation of chemical end products or toxins which destroy cells or inhibit their function with special predilection to the nervous system.

It is most important to first thoroly understand the cause of this condition and the manner in which it is produced, the avenues of ingress to the system and the changes that take place prior to and after absorption.

One must differentiate between toxemia as the result of infection and the diseased conditions as the result of autotoxemia, and what is manifestly important in the cure is to recognize pathologic changes as the result of intestinal absorption and those diseased conditions caused by suppuration and absorption into the circulation from the organs, etc., primarily infected.

The principal causes of gastrointestinal toxemia are pyogenic foci, constipation, pathologic changes in the duodenum, biliary tract, the colon and rectum. Of all these, constipation is the one condition which is responsible for most of our cases.

Broadly speaking, we have five types of constipation, *viz.:*

1. Constipation without marked symptoms.
2. Constipation alternating with diarrhea.
3. Constipation as the result of rectal obstruction.
4. Constipation coincident with senility.
5. Constipation from congenital deformities, intestinal and pelvic.

1. Constipation without marked symptoms is chronic and common, the patient seldom consults a physician, he may go along for two, three or more days without bowel action, feeling relatively comfortable but sooner or later, he will begin to complain of such symptoms as dull headache, lassitude, change in appetite, eructations of gas, increased weight and ptosis. As a rule, he will then consult a physician and give the following history: Having taken a cathartic, followed by a saline, had an attack of vertigo, nausea, vomiting and oftentimes fainting, flashes of light before the eyes and a dull frontal headache, and a marked metallic taste in the mouth. What has occurred here is that the cathartic and saline opened up avenues of absorption along the intestinal tract and an overwhelming amount of toxic substances were absorbed and the symptoms of acute autotoxemia produced, ushered in by chills, fever or subnormal temperature, nausea, vomiting and abdominal pains, vertigo of the severest kind. The patient may be unable to as much as raise his head from the pillow or turn it from side to side.

2. Constipation attended with diarrhea is due to one of the several types of colitis and invariably accompanied by symptoms of autotoxemia, alternating between the acute, severe and the milder type.

3. Constipation resulting from rectal diseases is usually associated with pathologic conditions higher up, and what is true here is true elsewhere, that recognizing a foci in one place does not excuse the leaving of a foci elsewhere and the careful examination of the entire elementary tract is most essential in all cases, especially when one has been able to locate a definite foci, because it is invariably true that more than one exists. Seldom do patients consult a physician in the very early course of their disease and when they do, there has been time sufficient for the pathologic changes to take place elsewhere, either by absorption into the circulation or continuity of tissue. Hemorrhoids, fissures, fistulae and contracted sphincters cause constipation. The above conditions are very common, more so than the general practitioner credits them for but it is equally true that in the hands of a specialist, finding these conditions, he is very apt to overlook such causative factors as are responsible for hemorrhoids, etc., associated with changes higher up. The symptoms resulting from rectal conditions

depend on the extent of the lesions and the reflex action on the nervous system.

4. Constipation coincident with senile changes, gives symptoms of autotoxemia that vary from the milder type to the acute. During the flare-up of the acute type it is not infrequent that a diagnosis is made of ptomaine poisoning, malaria, typhoid or any of the other acute infections. Many of the so-called pneumonia that clear up "overnight" are no more than symptoms of acute autotoxemia.

5. Constipation due to congenital deformation of the intestinal tract, as a rule, manifests itself early in life and the symptoms of autotoxemia produced are in proportion to the anatomical situation of the malformation and this deformity produces symptoms of autotoxemia when one or more of the many lesions develop that are common in the gut. Many of these congenital conditions diagnosed show up only later in life and were probably due to a foci of infection rather than congenital but by the process of inflammation and adhesions produce anatomical changes.

In general, the symptoms of gastrointestinal autotoxemia are widely distributed and grossly misleading—in many instances, they are the same as those ushering in acute infections: Chills, fever, sweats, subnormal temperature, vomiting, dyspnea and palpitation; the more chronic type headache, insomnia, fatigue, tired feeling on arising, weakness, mental depression, poor appetite and constipation. The symptoms of vertigo, nausea and chills brought on after taking a strong purge, are very diagnostic in this condition. All these symptoms are brought about by the absorption of toxins from foci of infection along the elementary tract and the diseases and conditions of the membranes commonly found and in treating this it is absolutely necessary to ascertain the point or points of infection.

The method of examination is fairly uniform. The usual clinical history, past and present, is carefully taken. The physical examination consists of the teeth, tonsils,

rectum and sigmoidoscopic examination. This is done with every case, the idea being to locate various foci of infection. The blood, urine, feces, gastric contents and bile should be examined when possible.

Treatment.—In the treatment of autotoxemia and its associated conditions, the examination of the feces is of the greatest importance. The old orthodox classification has been discarded in our laboratory. The grouping of bacteria into their various types and classifying the intestinal flora and diets accordingly has been found unsuccessful, for the various obvious reasons that all bacteria found in the intestinal tract are capable of growing either in the protein or carbohydrate media *per se*. The same bacteria found in the putrefactive stool will be isolated in the fermentative type or one or more types may predominate in any one of the conditions. Bacteria are "creatures of environment" and the same group which is classified as Sacchro-Butyric will, when conditions are favorable to them in the intestinal tract, group themselves in another patient as indolic. Our rule, therefore, is this: All stools are examined for putrefaction or fermentation tho study is more for pyogenic or hemolytic bacteria; patients are then placed on a diet protein or carbohydrate free.

The urine is studied as usual but especially directed to calcium oxalate as an excess of these crystals will produce the most unusual symptoms not only of gastric but pains of a rheumatic nature and can be well called, when found in excess, oxalate shower.

Treatment depends solely upon the foci of infection, its nature and extent. Teeth, tonsils, hemorrhoids, fistulæ are treated accordingly. A very important condition existing more frequently than is discovered

is contraction of the sphincters which may be due to a slight fissure or any of the other conditions found in the rectum or as a result of post-operative scars. In these cases, it is absolutely necessary to dilate the sphincter before anything can be done relative to treatment, higher up. When the biliary passages are involved, lavage and drainage are instituted. The treatment of the biliary passages and duodenal diseases are of sufficient importance and cover such a great field that it would require a paper in itself to go into the technic, etc. Suffice it to say that whatever treatment is instituted via the duodenal tube, diet and colonic irrigations, must be carried out.

The routine given below is for patients whether treated at home or institutionally.

As soon as the report in regard to the patient's feces is completed, he is placed on a strict diet. If the stool is putrefactive, all meats, fish, shell foods and eggs are cut out, and the following foods substituted: Purées and cream soups or vegetable soups without meat, green vegetables run thru a strainer, especially if there is evidence of colitis or duodenitis, starchy vegetables, cereals and fruits except prunes. No alcoholics of any kind are permitted. Salad with oil and lemon dressing. In the fermentative type of stool, all carbohydrate foods are eliminated. Green vegetable and protein diet is instituted. Before each meal 1 oz. of a freshly prepared and active culture of *bacillus acidophilus*, 1 oz. of sugar of milk in $\frac{1}{2}$ milk and $\frac{1}{2}$ buttermilk is taken and upon retiring. Colonic irrigations as per the following directions, are given daily:

The colon is washed out with a solution containing two drams sodium bicarb. and one dram of table salt to each two quarts of warm water, using the return flow, Y or T glass irrigator. The patient is placed on the right side, the rectal tube inserted about one inch and four ounces of the solution is run in slowly and permitted to drain off until about a quart is used. This overcomes the sensitiveness of the rectum. The tube is now inserted for a distance of four to six inches and one pint of the solution is run in and drained off, repeating this until about

fifteen quarts are given. The patient is again turned on the left side and the same treatment continued until the return flow comes away clear. About five bags of solution are given with the patient on the back.

Before the treatment about four turpentine stupes are placed on the abdomen, followed by deep massage. During the irrigation a warm stupa is always kept on the abdomen.

Before the patient's posture is changed another deep massage is given.

If there is any impaction of the bowels or rectum, the following enema is given before the irrigation:

Olive oil 8 oz.

Soapsuds, about cupful.

Salt, teaspoonful. Mix with 2 quarts of warm water.

At night 3 oz. of a *bacillus acidophilus* wash culture and 2 oz. of sugar of milk is injected into the colon by the way of the sigmoidoscope. If there are evidences of colitis, in which most all cases of constipation or autotoxemia suffer to a lesser or greater degree, every other day the patient is given 2 oz. of a glycerine preparation of krameria which is injected into the colon thru the sigmoidoscope. This acts both as a stimulant and contracts the membrane of the colon. At least three or four treatments a week are given by the Nagelschmidt Bergoni chair over the abdomen and is most beneficial in cases of constipation especially where the abdomen is very fat.

The following directions should be given to patients suffering from constipation and autotoxemia excepting, of course, where organic counterindications prevent:

SUGGESTIONS FOR PATIENTS SUFFERING FROM CONSTIPATION.

Upon rising drink one or two glasses of hot or cold water. Drink water between meals. On retiring drink water and take stewed fruit, with honey. Salads with plenty of olive oil and lemon juice as a dressing. Take strong coffee and cream with breakfast. Eat fruit and vegetables with each meal. These directions are governed by the state of the patient's stools, i. e., whether fermentative or putrefactive.

An effort should be made to move the bowels daily at a definite hour, whether there is a desire to do so or not. A block of wood about six inches should be placed so that the

feet may rest on it while on the toilet. The best time for this is immediately after breakfast. This procedure should be persisted in and the effort continued for at least ten minutes if the bowels do not move.

The following exercises should be taken and followed by a cold sponge:

1. Stand erect with the arms extended and the fingers in contact above the head. Stoop forward and try to touch the floor with the finger tips, moving slowly, and return again to the original position.

2. Lie at full length on the level bed or floor upon the back with the hands under the hips, and bring each leg alternately and slowly at right angles to the body.

3. Standing position, extend the arms sideways with the elbows straight and rise slowly until the hands meet above the head. Rise on tip toe at the same time. Stretch the arms as much as possible in doing this. Inhale deeply as the arms go up, and exhale slowly as the arms go down.

4. Massage the abdomen while on your back, first from side to side, then up and down, relaxing all the time. With fist knead the abdomen deeply.

Summary.—The symptoms of gastrointestinal autotoxemia are, as a rule, the result of more than one foci. That it is essential to locate all possible foci; that the finding of one extensive lesion should be an incentive to look for others because the greater a single visible lesion, the more probable are other foci; the careful study and treatment of the rectum, the strict adherence to diet following the laboratory findings of the stool, liberal doses of *bacillus acidophilus* culture, properly given colonic irrigations, fresh air and exercise.

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Cancer.—McGuire (*So. Med. & Surg.*) says the treatment of cancer may be divided into the preventive treatment and the curative treatment. The preventive treatment consists in the relief of chronic irritation and removal of precancerous lesions. The curative treatment consists in the removal or destruction of the cancer while it is still a local disease by the knife, thermo cautery, arsenical paste, X-ray or radium.



Glandular Derangements at Puberty.—

Wiesel calls attention to the fact (*Klinische Wochenschrift*, Berlin, June 4, 1923), that the whole endocrine system is disturbed if one gland is affected. Not only the sex glands, but also other endocrine (thyroid, suprarenals, thymus) have a normal post-embryonic development. The disturbances of the endocrine correlation are almost always due to a hereditary degenerative basis. Abnormal growth of bones, hypertrichosis in girls, or a virile type of hair distribution, hyperthyroidism and chlorosis are the most common types.

Multiglandular Insufficiency.—Vedsmann (*Ugeskrift for Laeger*, June 7, 1923) reports an interesting case of a previously healthy woman who at the age of 41 began to complain of headache, sensation of oppression in the heart region and increasing nervousness. By the end of two years the clinical picture of exophthalmic goiter was pronounced, and four years later myasthenia gravis developed, progressing to a fatal termination in two years. The blood-pressure fluctuated from 140 to 175 mm. during the last few months. The sugar content of the blood responded normally to epinephrin tests. The condition grew rapidly worse under suprarenal extract treatment

Fat Excess in Relation to Body Iodine and Thyroid Functions.—The results reached by McCarrison (*Indian Jour. of Medical Research*, July, 1923) in the course of his experiments with pigeons may be summarized as follows: Confinement in cages that became grossly contaminated by

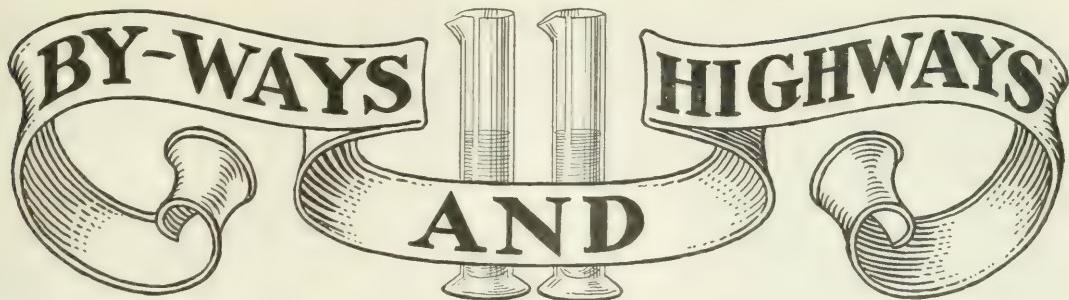
the animals' own excreta is a potent cause of thyroid hyperplasia and enlargement. It can be prevented by scrupulous cleanliness and to a greater extent by the administration of chlorine water. The thyroid hyperplasia under these circumstances is not due to inadequate supply of iodine in the food, but is probably due to the inadequate absorption, assimilation or utilization of iodine consequent on the conditions provided by dirty animal cages; of these conditions, gastrointestinal infection is considered to be chief. An excess of butter or of oleic acid in the food may, in certain cases, enhance the goiter producing action of insanitary conditions of life, such as are present in dirty animal cages; or, the goiter producing influence exerted by an excess of fats in the food may be enhanced, in certain cases, by such insanitary conditions of life. There is a reason to believe that the effects of fat excess in determining thyroid hyperplasia may be related in some way to bacterial intervention in the digestive tract. Cod-liver oil affords complete protection against goiter induced by insanitary conditions of life, such as are present in dirty animal cages. A relation exists between the intake of fats in the food, the amount of available iodine in the food and the functional perfection of the thyroid gland.

not sold except on prescription. One is led to ask, then, why this extreme popularity, if the leaders of endocrinologic thought do not approve? There can be only one answer—results. Practitioners must be satisfied with the effects produced by these products or they would not continue to prescribe them. We hold no brief for the manufacturers, but we see no reason why a preparation should be condemned simply because it is manufactured and sold commercially. The line between science and commerce is very difficult to draw; science is rapidly becoming commercialized and commerce is being more and more directed in a scientific or professional spirit. The most successful manufacturers of glandular products—as the writer knows from visits to their factories, both in this country and in America—employ highly trained scientists to elaborate and test their products; they have literary departments which would put to shame the editorial resources of some of our scientific journals; above all, they seem to make their first principle one of service to the profession and thru them to the patient. It is true that there are cheap and inferior products on the market, and much rubbish is foisted on the profession by dealers anxious to get rich quickly, but the same applies to all products for which there is no legal standard.

"The real question is: Is pluriglandular therapy justifiable? We know that most endocrine syndromes are pluriglandular, but we cannot in every case say exactly which glands are out of order—we cannot map out what Biedl calls the 'endocrine constellation.' If we could—and there are cases when we can—the true scientific method would be to write a prescription for the glands required, and we note that quite a number of manufacturers and pharmacists make a specialty of dispensing such prescriptions. When exact diagnosis is impossible, as it is in the vast majority of cases, one must fall back on empiricism, and in the pluriglandular products of the more reputable houses we can have our requirements met in a manner which has given, and doubtless will continue to give, the results looked for."

The Advantages of Pluriglandular

Therapy.—Treatment by means of combinations of glands is anathema, states the *Prescriber* (October, 1923) editorially, to the conservative pharmacologist; it seems to him to have no place in scientific medication. On the other hand, it is the main plank in the platform of the manufacturer of glandular products. Perhaps this accounts for the dislike entertained by the pharmacologist, for we frequently see sneering remarks about "commercial endocrinology." The mere fact that pluriglandular preparations have proved a sound commercial proposition proves beyond question that this form of medication is popular with the profession, for these products as a rule are



What About "Colds"?—From a doctor's viewpoint a "cold" is always an important condition, but the public has hitherto regarded it very lightly, and the phrase, "just a cold" is on everybody's lips.

The reason for this attitude is that the nature of colds has not been well understood until recently—now we know that a cold is an acute infectious disease caused by various microorganisms which often are passed on from one infected person to another and find lodgment somewhere on the respiratory mucous membrane. This explains why colds so frequently "go thru an entire family."

Some persons are especially susceptible to these infections because they are, as we physicians say, "sensitized"—that is, the protective mechanism of the body does not react against exposure to a cold and, therefore, the symptoms quickly arise upon the slightest provocation. By some authorities it has been thought that frequent colds are induced by acidosis. Normally the blood is alkaline and, while it never under any conditions becomes absolutely acid, its alkalinity may become greatly diminished, particularly so in certain infectious diseases. This reduced alkalinity seems to favor the growth of certain bacteria, thus allowing a functional imbalance of the glands of internal secretion to take place. These glands, according to present-day views, control metabolism; hence, if they fail to function as they should the body physiology goes wrong quite promptly, bringing about lessened resistance.

The Meaning of Lessened Resistance.—Experimentally it has been proven that animals whose feet were chilled by standing in cold water were more susceptible to infection than those living under normal conditions. Therefore, draughts and wet feet

predispose to colds because they lessen body resistance and enable the germs already present on the respiratory mucous membrane to get in their work. Likewise, bad air in poorly ventilated houses or public places lessens body resistance, and mouth breathing due to nasal obstructions or diseased tonsils and adenoids causes a malfunction of the respiratory system. Air breathed during the night as well as in the daytime should be as pure and plentiful as possible.

Some Fruits of Neglecting a Cold.—Many mild colds get well spontaneously it's true; but most of us are not immune, and we *do suffer* sooner or later either from a more severe infection or because we are "run down" as the saying goes.

When so-called complications take place pus may form in the nasal sinuses. It may then work its way or be blown into the Eustachian tubes, thence into the middle ears, from which it finds egress thru rupturing the drum and discharging thru the ear canal. Or it chooses another route, going over into the mastoid cells and bringing about mastoiditis—a disease even the name of which seems to strike terror in the minds of lay folk. Fortunately many cases of mastoiditis get well even without operation, while others are operated upon and go thru a slow but not especially painful convalescence for some six weeks.

Even more to be dreaded than mastoiditis is the pneumonia which may result from a "cold" infecting the lungs. Pneumonia is a disease of short duration, but treacherous and dangerous to the last degree, and, in spite of vaccines, open-air treatment, electricity, etc., the mortality is still high. If one could prevent or cure colds promptly, both "mastoiditis" and "pneumonia" would vanish from our dictionaries or be set down as "obsolete."

How It Begins.—The first symptom is a dryness or irritation or tickling somewhere in the nose or back of the throat. This is probably due to bacterial activity, and Nature often produces a sneeze in the effort to get rid of the irritating particles. Following the sneeze, there is a copious outflow of secretion which is Nature's effort to wash the infection from the mucous membrane. In the next stage, watery secretion gives way to a thick mucus or muco-pus, which is yellowish or even greenish and "very heavy," as the expression is. It is easy to see, therefore, what a serious matter a cold may sometimes become, and why many persons suffer all the days of their lives from such neglected infections.

"Home Treatment."—Everyone has some pet home remedy, the most popular among which used to be quinine and whiskey, less spoken of in these latter days, but the principles of cure are dependent upon the fact that we have to deal with a local infection in the nose, throat or chest, which later becomes a constitutional or general infection just so soon as the bacteria and their toxines begin to extend their influence to the general system.

Patients should avoid self-medication and drug store "counter prescribing." Many pharmacists have some profitable concoction which they sell as a "cure" or preventive for colds. These remedies usually fail, and then the doctor is consulted.

Some Simple Fundamentals.—The first thing for the patient to do is to get the bowels open by means of some good cathartic such as castor oil or Epsom salts. Then a hot foot bath or a hot tub bath may be taken, followed by a glassful of hot lemonade. One should go immediately to bed and cover up with warm blankets in order to induce perspiration. The diet should be light, that is, scanty in amount and should consist of fresh vegetables chiefly. Meat should be interdicted for the time being, at least in most patients, as it increases the amount of waste to be thrown off by the system.

Influence of Colds on the Singing Voice.—It sometimes happens in singers that the voice is very brilliant immediately preceding a cold. This is probably due to

the fact that the mucous membrane is quite dry, the nose is open, and the cords free from secretion. Such a stage of happy exaltation is quickly followed by a stage of depression; for the voice is likely to be very bad or entirely lost for a few days thereafter.

Working Principles of Treatment.—

The principles upon which the nose and throat specialist works, and, after all, a cold is a problem for the rhinologist, are: First, to open the nose; second, to wash out the infection; third, to disinfect; fourth, to soothe by means of some bland medicament; and fifth, to prescribe some inhalant or other remedial measure to be used at home. The first essential is to keep the nose open because that is the only way by which proper drainage and aeration can be secured. The second principle, that of irrigation, is logical because it flushes the mucous membrane surface and removes bacteria and their toxines. The third principle, that of destruction of microorganisms, is important but needs to be carried out with care as the disinfectant applied may possibly do more harm than the bacteria themselves. The soothing principle is usually some antiseptic oil or combination of oils, and the inhalations used at home are commonly drugs which are precipitated into boiling water from which medicated steam is inhaled.

Need for Study in Certain Cases.—

People who are subject to very frequent colds, "one after another," as the expression goes, require considerable special study. They are not uncommonly the victims of chronic sinus disease. Quite often these persons have suffered one or more severe attacks of influenza, and they have always noticed a predisposition to catch cold ever since. Here vaccines have sometimes been used with success, but surgical operations may be necessary in association with the vaccine.

Influence of the Daily Bath.—Sometimes proper bathing will help "harden" the body. In the morning, on rising, one may bathe the face and neck with cold water. Then sponge or spray the body with hot water 100 degrees Fahrenheit. This is to be followed by a quick plunge or spray

with cold water. After rubbing the surface quickly with cold water, rub thoroly dry with a rough Turkish towel, and "polish" the skin with a second dry towel. The skin should then be red and quickened, and one should experience a feeling of exhilaration commonly known as "reaction."

When one has a shower apparatus, this procedure can be very well carried out every morning, that is, a quick hot shower followed by a quick cold shower with rapid drying and rubbing down. One may then dress in warm, clean underwear and face the elements with a sense of security against catching cold. It must be understood, however, that there are many persons who could not safely undergo this vigorous hardening process.

Public Education.—We need to teach our patients certain facts regarding colds which will counteract much misinformation. To them we might outline the entire matter as follows:

"A cold is an acute respiratory infection, at first, local, then constitutional in its effects. While very often a simple matter, it may lead to serious complications, even death. It may be cured promptly within the first few hours, but can be cured only with difficulty when thoroly "seated." Never neglect a cold, never sing thru a cold if you are a professional singer, and do not consult the pharmacist. Do not attempt to cure yourself by home treatment, because, if you fail, as you are likely to, the cold will become thoroly fastened upon you and, consequently, be very stubborn and slow in disappearing."

lic nuisances, because, in harping on health, physicians do an unnatural thing, namely, they apparently are trying to diminish their own incomes, which looks suspicious. Therefore, not only the public, but legislators, too, often oppose new health measures because these represent the dreams of "theorists" and "unnecessary nonsense." However, education is helping to clear up this situation, and in these days many business and professional men having large responsibilities appear before individual physicians or those associated in group practice asking for periodic examinations. It has been proven to them that it is worth while to expend the necessary time, energy and money in the interest of keeping up "efficiency." Business men are eager for advice and grateful in getting it.

Perhaps it is because of this campaign of education on the part of physicians that golf has become what one may call the national outdoor game and is played by youngsters with the same avidity as their fathers exhibit. Moreover, the war helped to stimulate this notion of periodic physical examinations thru the rather surprising results determined by draft boards. It was remarkable, indeed, to find that fully one-third of all young men between 18 and 31 were unfit for military duty, and this fact called attention to the widespread need for a physical inventory of the health condition of every individual.

But the most difficult idea to establish in the public mind is the need for going to a physician with some slight ailment, for example, a cold. It does not seem to be at all understood that a cold may be a very serious matter. In fact, were it not for colds such a condition as mastoiditis would be unknown, and if we could prevent colds we could prevent all mastoid disease and the sometimes fatal complications. But if people would go to a physician with their colds, preferably at "the first sneeze," a physical examination might disclose some important disease such as incipient tuberculosis. Certainly, a thoro physical examination is indicated in all such minor conditions because it is at such a time that the doctor has an opportunity to study his patient. Thus it may be discovered that the cause of frequent colds is nasal obstruction, chronic discharge from sinus disease, or enlarged and diseased tonsils and adenoids.

What Is Preventive Medicine?—The phrase, "preventive medicine," is still a stumbling block to many people, possibly because they cling to the old Biblical theory that "the well need not a physician but they that are sick." Possibly, too, some laymen are of the opinion of the dear old lady who thought that preventive medicine was something to take to keep from becoming sick.

People in good health have always refused to think or talk about disease or death. They have constantly looked upon doctors, especially modern doctors, as pub-

Dentists have been more successful in educating their patients than physicians. It is commonly understood now that one should go every six months to have his teeth examined and cleaned and have any decayed spots filled before trouble takes place. We know now that by going to the dentist toothache will not occur, because any incipient decay is taken care of before much trouble has been caused.

Bearing on this question of physical examination of supposedly well people, Dr. Richard Cabot, of Boston, carried out an interesting experiment. He and four other physicians in various hospitals hired part of a hospital for certain afternoons and proceeded to examine one hundred business men in groups of twenty-five. The physical examination thus carried out was most thoro, and sixty-four men who thought themselves in perfect health were found to be in need of attention. One man, for instance, who had thought that his eyes were perfect, was referred to an eye doctor. He had no headaches, no eye symptoms of any kind, and he had gone into this group examination of one hundred mostly because his friends had done so, and he had a certain curiosity to see how it would work out. He wore glasses, but his eyes were satisfactory, altho he used them a great deal for reading. But when he got to the eye doctor it was found that he was under the spell of a disease called "glaucoma," which in its early stages is subject to great improvement or cure, but which, if allowed to go on, is likely to result not only in blindness, but to demand complete removal of the eye.

Still another experiment is being carried out at the University of California. This is a free state university having no tuition fees, but certain small incidental fees, among them a fee for physical examination to determine the state of one's health. Students registered at the University of California pay six dollars a year whether sick or well, and this sum acts as a sort of health insurance for one year, not only entitling one to examination, but to full care of his health for this period. There are between seven and eight thousand students each year who pay this fee. This totals, roughly, \$42,000 a year, out of which there is maintained a small hospital and a small group of doctors who

care for the students. The physical examination and general diagnostic work is well performed by these physicians, who give practically their whole time to this work. Thus, these young men and women are getting thoro, scientific examinations with recommendations for restoration of function where necessary for a total of six dollars a year. One ventures to say that the actual value can scarcely be measured in dollars and cents.

No, preventive medicine does not mean that physicians are trying to make business, for such is not their aim. They are simply trying to teach people the meaning of the old phrase, "health is the vital friend of bliss." To be ailing means to be unhappy and inefficient. The medical profession is trying to prevent disease instead of simply trying to cure it. Prevention and early treatment are the watchwords of future progressive medical science.

Dr. W. J. Mayo on the Functions of the Spleen.—In his lecture before the Sixth International Congress of Surgeons in London, July, 1923, Dr. W. J. Mayo said that the spleen is chiefly a mechanical filter. For many years scientists have been trying to find out the function of this curious gland, but according to Dr. Mayo, the spleen removes from the blood degenerated red blood-cells and toxic agents "above colloid size." These rejected substances, he says, are shunted on to the liver for further elimination. Altho the function of the normal spleen is not of much importance, a diseased spleen is a serious menace to the blood and liver. Removal of the spleen surgically is indicated in certain diseases such as pernicious anemia—in fact a chronically enlarged spleen which does not yield to medical treatment should be removed as soon as possible unless there is some contraindication to this operation.

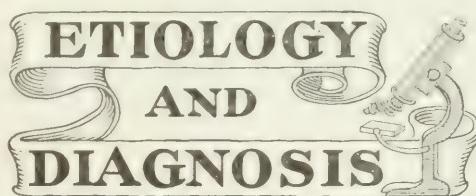
Dr. Mayo has removed the spleen 295 times. He showed a table where careful records had been kept in 108 cases with only 15 deaths and many good results. The reasons for the operation were jaundice, pernicious anemia, and severe abdominal injuries where the spleen is ruptured. In many cases transfusion of blood from some healthy person was carried out preceding

splenectomy. While there are no "cures," the abnormal blood picture improved, and ten per cent. of the cases had their lives prolonged more than five years. Elderly patients as a rule do not stand the operation well.

Speeding Up Evolution.—Professor Thomson, of Aberdeen University, has given 20th century egotism a timely and well-deserved jolt by reminding his contemporaries that their fancied superiority over primitive man is absurd and that in the slow process of evolution the space between the Neanderthal man and the modern man is but a brief second in point of time. Professor Thomson shatters the current belief that primitive man was brutish, dull, lascivious and bellicose. "There is," he says, "more justification for regarding primitive man as clever, kindly, adventurous and inventive." Whether this is an optimistic or a pessimistic view depends on the individual; some may see cause for depression in the thought that man has made so little advance in so many centuries of so-called progress; others may find it heartening that the nature of man is almost as solid and immutable as the eternities. In this respect, there are two types of individuals: those cynics who point to the civilizations of the past as proof that we are making no headway, and the optimists who point to the dark ages as evidence that we are forging ahead at an amazing rate in point of civilization. Each is right, in the partial sense in which he views the problem, but neither seems to be aware of the fact that he is basing his definition on one of two contradictory aspects of the same thing. The truth is that man has stood still or practically so for centuries, while everything outside of man has gone forward, thus leading to a false, or at any rate confusing, impression of progress. Evolution, in short, has been pursuing its quiet, slow course, almost imperceptible in its advance, while progress has been leaping forward by bounds. The mechanical advance of the past century, with its amazing discoveries and inventions, has been out of all proportion to the lack of advance in man himself, and the only upshot of our so-called civilization is a discrepancy more marked than ever before between man and his environment.

This discrepancy, which has inspired such confidence in the optimists, is really a source of no little concern to the scientific observer. The locomotive has attained terrific speed, but it has detached itself from the carriages which it has been drawing. The rush of the locomotive, admirable as it may seem, is therefore an empty accomplishment as long as the carriages and their passengers remain marooned on a side-track.

If there is any justification for those who maintain that progress has been too slow, there is even greater justification for those who maintain that there has been too much and too rapid progress in the past century. Man, remaining unaltered in the face of all the changes that have taken place about him, has been unable to keep pace with these changes—his nature obeying a less elastic law of evolution. He has found no better use for the inventions and discoveries of his age than the Neanderthal man would have found had they been invented or discovered in his day. Our primitive intelligence has been unable to employ modern progress except in the most primitive fashion. Our first test of a new invention is: Can it kill more people than the old instrument? And its value is judged by the answer. That is approximately the way the Neanderthal man's mind worked when he discovered flint. There is no use in speeding up progress unless we can speed up evolution, and until the two can be made to keep pace with each other our vaunted advance over primitive man is a hollow boast.



Defective Diet As a Cause of Sterility.—According to Macomber (*Journal of the American Medical Association*, April 7, 1923) that the fertility of a mating could be expressed as the product of the fertility of the individuals concerned, and that if this mating fertility is below a certain level, which is termed the threshold for reproduction, no young would result, but that if it was above this level the mating would be positive. The nature of the diet had a distinct bearing on fertility. The effect of diet on inbred animals was to reduce fertility, and to increase the amount of sterility.

ity. The kind of dietary deficiency is not important. It seems rather to be the degree, since, the greater the deficiency, the larger the proportion of sterility. The way in which the diet seems to affect sterility is thru its general effect on the health of the individuals. The less the effect on health, the less on the average the effect on fertility. There may be great individual variation in fertilities. Such variation is increased by inbreeding and by deficient diet. When the variation is great, the amount of sterility is also great. There are individuals whose fertility is so low that they are unable to reproduce with one another, but whose fertility remains sufficiently high to allow immediate and successful reproduction with highly fertile individuals.

gerated estimation of weight, size, etc., the protracted motor reaction time, the phenomena of abnormal tension, catalepsy, uncontrollable weeping, mental inhibitions, inability to focus the attention, abnormal uniformity in reactions, abnormal emotional instability, or excessive emotional reactions. With predominance of symptoms from one of these three subordinate centers, it is important to note any suggestion of disturbances from the direct frontal lobe deficit group; for example, any tendency to apraxia with cerebellar symptoms, or to frontal mental disturbances with Parkinsonian symptoms. The physical and the mental activity of the frontal brain is along the same general lines, and both, he explains, have evolved from the change in relation to the outer world which came when man began to walk erect.

Gastric Ulcer in Relation to Focal Infection.

Rosenow's researches, asserts Ensterman (*Minn. Medicine*), seem to prove that many, if not all, ulcers of the stomach of man and of domestic animals, are associated with a streptococcal infection in the ulcerated area, that foci of infection, such as the tonsils and teeth, harbor the streptococcus and predispose to ulcer and that, when isolated from the ulcer and from the distant focus, the streptococcus has elective affinity for the stomach, producing hemorrhage and ulcer on intravenous injection. Rosenow has recently maintained specific infecting power and specific immunologic properties in the streptococcus isolated. From time to time the writer says he has referred patients to him for bacteriologic study, who had active lesions and foci suspected of causal relationship. The findings have almost invariably been positive, so far as the elective localizing power of bacteria was concerned. Such investigations will be continued as circumstances permit, in order to obtain data with regard to the causal relationship between focal infection and systemic disease. Thus far patients with primary ulcer, recurring hemorrhage, secondary and anastomotic ulcer, achylia associated with low-grade pancreatitis and cholecystitis, have been investigated, with results apparently proving the causal relationship of parasite and disease, and the striking improvement in the health of the patient following thoro and proper removal of all foci.

Differential Diagnosis of Disease of the Brain.—In his comprehensive study of the brain, Goldstein (*Médizinische Klinik*, Berlin, July 15, 1923) lays stress on the need for closer analysis of the symptoms from disease in the frontal lobe. The direct consequences of loss of frontal lobe functioning are easier to recognize than those which result from the loss of the frontal lobe's inhibition on the functioning of its three subordinate mechanisms, the cerebellum, the brain-stem, and the extrafrontal cortex. The consequence of this isolation of these three mechanisms is seen in the exaggerated reaction to irritation of the vestibular nerve, the exag-

The Etiology of Nephritis.—With respect to the causation of chronic nephritis, points out an editorial writer in the *Jour. of the A. M. A.* (December 15, 1923), Newburgh has well summarized the two outstanding convictions. They are, he says, that some contracted kidneys are the end stage of an acute or subacute nephritis of bacterial origin, and that nearly all of the remaining cases are intimately related to arteriosclerosis and cannot be properly understood unless the two processes, the sclerosis of the vessels and the sclerosis of the kidneys, are studied together. Newburgh's own experimental investigations both on animals and on man have led him to assume that indulgence in high protein diets will quickly give evidence of renal injury. He believes that man has not yet developed kidneys which can excrete, without suffering injury, the products of a protein ingestion little, if any, higher than that indulged in by great masses of humanity. If it should prove to be true that the long continued "abuse of protein" makes of the renal apparatus a *locus minoris resistentiae*, as Newburgh suggests, it could more readily be understood that such a weakness would greatly increase the likelihood of further damage by infection. Chronic nephritis is comparatively rare among inhabitants of the tropics, yet is common in the temperate zones. It is well known that Europeans and North Americans have been accustomed to consume more protein in the form of animal food than do the native tropical races. Hence, Newburgh asks, may not the excessive protein metabolism of Northern peoples be partly or even largely responsible for the high incidence of chronic nephritis among them? It is a bold venture to assert that chronic nephritis is, generally speaking, caused by the combined effects of infection and abuse of protein. Such a thesis involving factors that are remediable demands respectful consideration. Can it be substantiated?

The Causation of Rickets.—In their investigation of the important subject Paton and Watson (*British Journal of Experimental Pathol-*

ogy, August, 1923) reported that a limitation of the supply of calcium proved to be of more importance in determining the onset of rickets than the limitation of vitamine A. A very restricted supply of calcium, altho leading to changes in the bones, chemically and structurally resembling those found in rickets, did not materially reduce the calcium of the blood and muscles, or the inorganic phosphorus content of the blood. The retention of phosphorus appeared to be determined by the retention of the calcium. The percentage of the calcium retained did not vary very markedly with the amount in the food, within the limits investigated from 0.02 to 0.198 gm. calcium oxid per kilogram. The very high percentage retention of lime in the calcium-poor diet makes it difficult to explain the favorable action of cod-liver oil on the retention. A comparison of the condition of puppies exposed to sunlight thru glass with those from which direct sunlight was excluded showed that the latter condition favored the onset of rickets, but whether it was associated with the lethargy manifested by these puppies is not indicated. The addition of olive oil to a diet which was adequate to prevent rickets actually favored its onset. Cod-liver oil exercised a marked effect in favoring the cure of rickets in puppies. The addition of feces from cases of infantile rickets to the diets of puppies, whether on a diet of full cream, milk and bread, or on a diet of separated milk and bread, was not followed by a development of rickets. The injection of blood from cases of active infantile rickets did not produce the condition in puppies on a diet of full cream, milk and bread. While these experiments give no support to the theory that rickets is an infective disease, they do not disprove the possibility that a particular condition of the intestinal flora, which might be propagated by fecal infection, may so modify the absorption of calcium and phosphorus as to lead to rachitic changes.



A New Idea in the Treatment of Leg Ulcers.—Engelbreth (*Ugeskrift for Laeger*, June 7, 1923) maintains that the ulcer in a varix of the leg is the result of infiltration of the tissues. Measures which do not attack the infiltration is almost sure to fail, while, if the infiltration is effectually combated, the ulcer will disappear. He describes a case of leg ulcer treated on this principle with light vibratory massage to influence the infiltration, supplemented with yellow light, which he has found useful in treatment of ulceration in general and in eczema. In the case described, the leg ulcer in the man, aged 65, had appeared six years before, and after a course of two years it had

healed under a year of bed rest and various local applications. The ulcer had recurred at various intervals but yielded to prolonged bed rest. The present recurrence was of six months' standing; the ulcer was very painful, and the man had been confined to bed. Under the vibratory massage and yellow light applications for one hour on alternate days, the patient up and about all the time, the ulcer healed completely, the skin normal, in three weeks.

Retain the Functions of the Gall-bladder.—Since it has become the almost universal custom to remove gall-bladders on slight indications, it is of interest to hear Parham's (*New Orleans Med. and Surg. Journal*) strong plea for a more conservative attitude. His conclusions are:

"Instead of saying that the gall-bladder should always be removed, except when contraindicated by the operative risk, I desire to reverse the formula and say the gall-bladder should only be removed on account of definite crippling pathology which will preclude restoration to useful function, for the removal of the gall-bladder changes physiologic relations, which should never be done without adequate reasons."

Quinine-Magnesium Sulphate Treatment of Malaria.—Believing that the malarial paroxysm is of the nature of an "anaphylactoid" phenomenon, Sinton (*Indian Medical Gazette*, September, 1923) has devised a combined quinin-alkali treatment, thus enabling the natural defenses of the body to combat any tendency to "acidosis" or diminished alkali reserve, making the reaction of the body fluid more favorable to the optimum parasiticidal action of the quinine and at the time helping to alleviate the symptoms of cinchonism. The alkaline mixture, per dose, consists of sodium bicarbonate, 60 grains, and sodium citrate, 40 grains in 1 ounce of water. The quinine mixture consists of quinine sulphate, 10 grains; citric acid, 30 grains, magnesium sulphate, 60 grains in 1 ounce of water. One dose of each mixture, from fifteen to thirty minutes apart, is given thrice daily for four or five days and twice on each of two successive days; 180 grains of quinine is given in seven days. Very favorable reports are made from the use of this treatment.

Perthes' Disease.—As a result of studying this subject in the current literature, Caruthers seems to feel that its real title should be "The Disease of Many Names," better known as Legg's disease, pseudo-coxalgia, osteochondritis deformans, and juvenile deforming osteo-chondritis.

Perthes' disease is the name applied to a class of affections formerly mistaken for mild forms of "hip disease."

It was first described by A. T. Legg in 1909 as an obscure affection of the hip joint; by Calve, in 1910, under the name of pseudo-coxalgia, and in a more detailed manner by Perthes in that same year, or thereabout.

If a personal name should be given it, no doubt it should be called "Legg-Perthes' disease." H. L. Taylor, in some of his recent publications, has designated the condition as "quiet hip disease."

The etiology of it is not obscure, for a definite history of trauma of great or less severity is given. However, this question of trauma as a factor has been disputed and proven not to exist by Allison, of St. Louis, who tried it out in a large number of cases experimentally with dogs. It is seen most often in the male, during the ages from seven to adult. It is almost invariably unilateral, making its appearance in apparently healthy individuals free from all history and findings of tuberculosis, syphilis, rickets, scurvy and infections.

The clinical picture is one of a child usually between the ages of six and eight or older who comes to you with a history of a fall four or six months previously, limping at the time. He complains of one leg which tires easily and a slight deformity at the hip, and is unable to bring the leg inward without some pain which, especially on marked abduction, is severe. Flexion and extension are apparently normal, and possibly there is a little shortening of the limb. Bryant's triangle will show, no doubt, a shortened base line; furthermore, the condition is unilateral. The question of diagnosis has already been considered.

Treatment should consist in relief of weight-bearing, whether it be by rest in bed or some appliance, regardless of the fact that this condition is considered a self-limiting disease of two or three years.

The Treatment of Vertigo.—In a very complete study of vertigo there are several factors which it is desirable to investigate in order to learn their possible influence: the alimentary canal, the ears, the sight, intoxications. All this is difficult, says a writer in *Journ. des Praticiens* (July 28, 1923) but should not cause anxiety. These different origins set aside, the circulatory and the nervous systems must be considered, in which case the matter is more serious. There may be added as less common traumatism and the phobic states. Treatment is above all a function of diagnosis.

Alimentary Canal.—Hypersthenic dyspepsia with constipation is the most frequent cause. In this kind the preparations of bismuth and magnesia afford the greatest service. Half an hour before the morning and the evening meal a packet in half a glassful of water should be taken.

Magnesia hydrate.....1.50 g. (gr. xxij)

Bismuth, subnitrate,

Powdered sugar.....of each 2 g. (gr. xxx)
for one packet.

This should be continued for two months. The amount of magnesia may be increased or decreased according to the effect produced.

Great eaters with atony of the stomach suffer from vertigo as well. In such a case the old treatment of Bretonneau, revived by A. Robin, is indicated: A claretglassful of infusion of quassia, 1.50 g. prepared on the previous evening and decanted next morning. This is taken every day for a fortnight. Before the midday and the evening meals 6 drops of tincture of nux vomica in a spoonful of water, or a dessertspoonful of the following draught:

Strychnia sulphate.....0.02 g. (gr. $\frac{1}{3}$)

Syrup of peppermint.....200 g. (5vjij)

This is taken for ten days, then left off for a similar period and taken again. Appropriate diet must be taken. Neither wine, tea, coffee, nor smoking is allowed. Constipation is corrected with small aloes pills.

Ear.—Every lesion of the ear, external, middle, or internal, is susceptible of setting up vertigo. Ménière's disease supposes an irritation or an alteration of the labyrinth. Any cerumen present in the external ear must be washed out, and hydrobromide of quinine ordered, not in the large doses recommended by Charcot but in small ones.

Hydrobromide of quinine...0.05 g. (gr. $\frac{3}{4}$)
for one pill. One before the midday meal and another before the evening meal. To be taken for ten days.

Lermoyez and Boulay recommend 20 drops of the 1 in 1,000 solution of adrenalin every day, or pilocarpine hydrochlorate, 5 mg. to 1 cg. for ten days.

Hydrochlorate of pilocarpine 0.20 g. (gr. ij)
Distilled water.....10 g. (5iss)

Three drops before the midday and the evening meals for ten days, increasing to 5 and to 10 drops.

Lumbar puncture has succeeded in labyrinthine disorders; it lessens the deafness and the hummings. From 10 to 30 c. c. should be withdrawn, and a puncture made once a fortnight. Some patients only improve after one or two punctures, but, unfortunately, the effect is very uncertain.

Arsonalization and galvanization, 3 to 4 milliamperes for three or four minutes, have procured some favorable results.

In the course of nervous syphilis, either secondary or tertiary, attacks of vertigo have been observed accompanied by serious auditory symptoms. They have sometimes been noticed in the course of arsenical treatment which has reactivated lesions badly extinguished. Syphilis of the internal ear is accompanied with alterations in the cerebrospinal fluid. It is of bad prognosis, for it often heralds the appearance of other nervous symptoms.

Sight.—Vertigo of visual origin is common. The refraction and mobility of the eyes must be determined.

Intoxications.—Alcohol, tobacco, and carbonic oxide may be involved. Carbonic oxide will be thought of in rooms warmed with defective ap-

paratus. Sometimes drugs are causing the trouble, quinine, salicylate of soda, hasheesh. When the cause is suppressed, the vertigo ceases. The kidneys often cause vertigo by uremic intoxication.

Circulatory Disorders.—Arterial hypertension may cause vertigo, as well as can anemia, syncope, and hemorrhages. The slow pulse is a daily factor.

Diseases of the Nervous System.—Many among these cause dizziness. The most common are atheroma and cerebral syphilis. Atheroma must not be decided upon too quickly in an elderly patient, for it may well be a question of gastric vertigo.

The *vertigo of traumas* and of cranial trepanning is decreased by bromides, 3 to 4 g. (gr. xiv-5*i*) a day, the use of laxatives, and a strict diet.

The *vertigo of phobias* is obstinate. The patients cannot go out without a walking-stick, and search for a support round them. Drugs are of no value, and reliance must be placed upon the persuasive words and optimistic opinions of the physician.

Health Contracts.—In a communication to the *Southern Medical Journal* (December, 1923) Dr. Lewellys F. Barker, refers to the recent newspaper account concerning the statement that the president of one of the large railroad equipment companies in Philadelphia, a man of 67, who is stronger and more active now than he was five years ago, attributes his better health to a special contract made with his physician.

On finding, several years ago, that his health was failing, this leader of industry consulted his physician and suggested making a contract with him for the supervision of his life with a view to the maintenance of his health for the following decade. The industrialist offered to pay to the supervising physician a certain sum each year, this sum to be increased every year because of the fact that the older he grew the greater, in all probability, the difficulty of keeping him in good health. If he were to become ill the annual retainer was to be reduced according to the length of the illness.

The physician accepted the offer. He has since examined the man at intervals of not less than two weeks and it is asserted that, since the contract was entered upon, the patient has followed instructions conscientiously and has not lost a single day from work.

Such a contract suggests, says Dr. Barker, the method of payment of physicians said to be in vogue in China, where the doctors are paid as long as the patients of whom they have charge keep well, but are not paid when their patients are ill.

Whether or not such a form of contract between physician and patient as that referred to above is likely to become popular in the United States it is difficult to say. But that

business men and professional men generally would do well to enter into some arrangement with their physicians thru which they would submit to periodic health examinations and would follow the dietetic-hygienic régimes prescribed for them goes without saying.

A contract embodying an annual retaining fee would seem to be unobjectionable, tho that this fee should be reduced if the patient should become ill despite the best efforts of his physician would seem to be unfair to the latter. For, assuming that the annual retainer is a fair compensation for the making of the periodic examinations and for the careful supervision of the client's mode of life, it would seem that when unpreventable illness occurs the physician should receive additional remuneration for the extra work it entails rather than be penalized for what is not his fault.

Very properly Dr. Barker emphasizes that the laity will not be benefited by believing that all disease can be prevented even by the most competent physicians who examine persons when they are in health and prescribe the mode of life that they are to follow. That much disease could be prevented by periodic health examinations is undoubtedly true; but that in the present state of medical science and art all disease could be abolished by such practice is wholly untrue. Finally, medical men must take care not to mislead laymen into ill-founded expectations, and they should see to it that in their contractual relations there is no intimation of promises that cannot be kept.



Transient Unilateral Hyperhidrosis Following Ingestion of Acid Foods.—Hall (*Irish Jour. of Medical Science*, October, 1923) reports the case of a man who developed a reddish blush over his right cheek bone about midway between his eye and ear immediately after eating highly acid foodstuffs such as rhubarb, stewed gooseberries, baking apples or vinegar (either hot or cold), and this was quickly followed by small beads of sweat over the blush spot, which then gradually resumed its normal appearance. Nothing was found in the general condition to account for this.

Deficiency in Diet and Public Health.—Newsome (*Jour. of State Medicine*, September, 1923), in discussing diet and health, claims that all is likely to be well if the modern diet is supplemented by a daily supply of foods rich in vitamines, in mineral matter, and in protein of good food value. The best foods for the

purpose are milk and milk products, eggs, green vegetables and fruit. With a sufficiency of these there is no reason why the rest of the diet should not consist of the cheaper foods which bulk so largely at present. The great need at the moment is that by every possible means people should be educated to a knowledge of the defects in the national diet, and of the simple precautions which can counteract its evil effects. A good deal is already being done, thru the education of school children in elementary hygiene, thru cookery classes, thru the work of health visitors and of infant welfare centers, and of voluntary agencies.

Value of Milk and Orange as Supplementary Lunch.—Recent studies by Chaney (*American Journal of Diseases of Children*, October, 1923) point to the fact that a midmorning lunch is of value in overcoming a condition of underweight in children. Oranges seem most efficacious in producing a gain in weight. This may be due to the vitamine content of the orange. Milk, while it produces a favorable increase in weight, is not the only food valuable for the midmorning lunch. Concentrated bottled orange juice appears to be of marked value in stimulating growth in the underweight child. It is not equal to fresh oranges.

Appetite Extolled as Dietary Guide.—Appetite is the best all round guide in the selection of diet, Dr. Graham Lusk, professor of physiology at Cornell Medical School and specialist in the study of nutrition, told members of the American Public Health Association in session at Boston recently. He criticized what he termed dietary fads.

"With a plentiful supply and choice of foods the average individual may be trusted to use his instinct in their proper selection," Dr. Rusk said. "During the war the English people rationed most of their important palatable foods, such as meat, milk, fat, and sugar, and left coarse, lightly milled wheat bread as a reserve to be taken to fulfil the energy requirements of the body. After the war when importations became easier, it was popularly stated by them that whatever else happened they would return to white bread just as soon as possible. It seems as tho this is a better test of values than the frantic appeals of some doctrinaires on this side of the water who wished to ordain by legislation and for all time that lightly milled or graham bread should be the standard of the American people.

"It does not seem possible that the established habits of diet of man can be deleterious to his welfare. For example, the Eskimo lives largely upon meat yet does not contract gout. Meat increases the heat production very greatly and is a comfort-producing food in cold weather."

Illustrating the accuracy of animal appetite, Dr. Lusk said that experiments had shown that animals instinctively choose foods that are best for them. Rats, offered a perfect synthetic diet deficient only in one of the vitamines, abandoned it for a diet to which the missing vitamine had been added in the form of slight amounts of a watery extract of yeast.

Why people generally liked meat was, he said, a question which science had not yet been able to answer since it had been repeatedly shown that health and strength could be maintained without it. The appetizing flavor had been shown not to explain why it was so desired.

"A diet low in protein and in calories depletes the protein reserves of the cells, as was frequently in evidence during the war. The ingestion of a goodly quantity of meat under these circumstances certainly results in a large retention of protein by the hungry cells accompanied by a sense of well-being. Who can answer the question 'What is meat?' We know that it is relished. We remember poking fun at the tomato as nothing but flavored water colored red. And now we know it contains three important vitamines. While we cannot explain meat, we must respect its appeal to human beings. It certainly is not injurious. The ordinary mortal has little to fear if he plans his diet to conform to the moderate dictates of his appetite."

Some Golf Rules for Elderly Players.—The Health Commissioner of New York State, Dr. Nicoll, calls attention to the possible danger of golf to those whose physical condition does not warrant their too strenuous devotion to the game. He accordingly has recently recommended what he described as "a few rules for aged golfers which all of them will resent," as follows:

1. If your physician advises against golf, don't play.
2. Don't rush between holes. You won't hold up anyone if you walk steadily at a moderate pace, and your game will not suffer thereby.
3. Choose fairly level courses if possible, and take hills very slowly.
4. Take time to digest a light lunch. Heavy eating has nothing to recommend it except sociability.
5. Don't continue the game if you feel dizzy, weak or otherwise unfit.
6. Don't lose your temper. It won't help your game, your health, or the work of your caddy.
7. After your game and shower, protect yourself from drafts and cold winds.
8. If you must play in the rain, change into dry clothes after a shower and get a hard rub-down immediately after you come in.
9. During the off-season a moderate amount of indoor golf is a valuable form of exercise and will keep you hopeful for an early spring.



Helpful Hints.—When cranking an automobile engine with an electric starter, throw the clutch out. This allows the starter to turn the engine alone without turning the clutch and other gears. This saves the life of your battery, especially in cold weather.

Never run your car without a hub cap, or if your hub cap is cracked. To do so, would allow foreign matter into the bearings which in time would destroy them.

Cleaning your radiator, it is always wise to flush from the rear thereby eliminating any chance of getting water to the electrical units and shorting them.

Keep your engine block and drip pan free of oil and grease. Once a week, with kerosene, cloth and stiff brush if necessary, clean under the hood, thereby reducing fire hazard.

The best oil used in your crank-case is, in the long run, the cheapest. Change your oil regularly and add to the life of your car.

When cleaning your engine with kerosene or gasoline, it is always advisable to disconnect one of the battery terminals, eliminating short circuits and any chance of fire. Your engine should be cleaned at least twice a month.

A good thing to do at this time of the year before resorting to alcohol in your radiator, is to first cleanse your radiator with soda solution. About 10 or 15 cents worth of ordinary washing soda to the amount of water necessary to fill your radiator and run your engine for 10 or 15 minutes will thoroughly clean all rust and deposits, assuring good circulation.

Don't forget to give your grease cups a turn or two each day on your water pump. Also on your fan bearing. Your fan revolves at even greater speed than your crank-shaft.

At times you may not be getting proper feed to your feed line. Look at the screen at the outlet of your gas tank. It may need cleaning.

With a new car, it is suggested by those in authority and engineers of standing to add one quart of light oil to every 10 gallons of gasoline, affording cool running of the engine and also providing an ideal lubricant for tight fitting valve stems and pistons.

To obtain the best mileage from your tires they should be shifted from one wheel to another. Not to do so, at least every thousand miles, means premature death to your tires. The strain on your rear tires, particularly the right rear, is greater than the front ones.

A great many drivers and owners of cars are often too ready to blame the makers of cars when grease oozes out over the rear axle and wheels. A little judgment in using proper heavy oil or grease in the rear housing and

not above the level plug, will eliminate such trouble.

Formula for Anti-freezing Mixture.—Following is the table for making the right proportion for anti-freezing mixtures:

Temperatures at which battery will freeze at various stages of discharge:

Spec. Gravity of Electrolyte	Freezing Point, Deg. Fahr.
1100	+18
1125	+13
1150	+ 6
1175	- 3
1200	-16
1225	-34
1250	-60
1275	-83

Table showing amount denatured alcohol to use to prevent freezing of water in radiator:

Temp Degrees Fahr.	Alcohol	Alcohol	Water
30°	5%	1 Pt.	to 19 Pts.
25°	8%	1 Pt.	to 11 Pts.
20°	15%	1 Pt.	to 6 Pts.
15°	20%	1 Pt.	to 4 Pts.
10°	25%	1 Pt.	to 3 Pts.
5°	33½%	1 Pt.	to 2 Pts.
0°	40%	2 Pts.	to 3 Pts.
—5°	45%	9 Pts.	to 11 Pts.
—10°	50%	1 Pt.	to 1 Pt.

Poison From Automobile Exhausts.—The *Bulletin of the Indiana State Board of Health* reports that it has been shown by recent investigation and requirement that the automobile has a dangerous menace in its exhaust. In the process of burning a mixture of air and gasoline a poisonous by-product is given off in the form of a gas which is invisible and for this reason all the more dangerous.

Carbon monoxide, which is a product of incomplete combustion, heads the list of gaseous poisons as a destroyer of human life, and carbon monoxide is given off from the exhaust of automobiles because automobile combustion is always more or less incomplete. It has been found upon experiment that gases from automobiles contain from four to eight per cent. of carbon monoxide and that the air within five to fifteen feet above the surface of the streets where automobile traffic is concentrated contains from one to two parts of carbon monoxide in each ten thousand parts. In the congested districts of our larger cities the air supply to most of the buildings is taken in from the level of the street so that the poisonous air not only affects the pedestrian, but the occupants of stores and offices as well. Normal air shows practically no carbon monoxide;

hence it can be readily understood that air showing two parts in ten thousand becomes a decided public health menace.

Acute carbon monoxide poisoning is shown by an uneasy feeling of illness, with throbbing of the blood-vessels and a burning sensation of the face, which is soon followed by headache, dizziness and nausea. If the poison is continued the patient soon becomes drowsy and loses consciousness. Ordinarily gas poisoning is identified by a characteristic redness of the skin, the so-called "cherry red color." Chronic poisoning is indicated by dizziness, nausea, general weakness, or tired feeling with lack of mental or physical concentration. With the tremendous increase in the number of gasoline driven cars, the constantly increasing traffic congestion, especially in cities, and the fact that automobiles are so constructed that the exhausts and discharge of bases occur at the street level within the traveling zone of pedestrians, and at the very source of the air supply of most buildings, it is evident that gas poisoning from automobiles constitutes a real menace to public health and that we should have the best attention and thought of automotive engineers.



Music While Operating.—At the Providence Hospital in Washington, D. C., phonographic music has been employed in the operating room to soothe the subconscious mind of the surgical patient.

American Congress of Internal Medicine.—The Congress will hold its annual convention in St. Louis, February 18 to 24, under the presidency of Dr. Elsworth Smith. Dr. Frank Smithies, of Chicago, is the secretary. Special clinics will be held at the St. Louis and Washington Universities. Dr. Wm. Engelbach is the chairman of arrangement committee.

A Wise Appointment.—Dr. Florence E. Kraker, of Philadelphia, who has just returned from a year in China, where she was on the teaching staff of the Margaret-Williamson Hospital at Shanghai, has been appointed specialist in maternal hygiene in the Children's Bureau of the United States Department of Labor, it was announced recently.

Dr. Kraker will also be associate director of the maternity and infancy division of the Children's Bureau, which has immediate direction of the Federal maternity and infancy act.

Dr. Kraker's work in China, where she helped to give modern obstetrical training to young Chinese women doctors, was preceded by many years of experience in connection with medical schools in this country. She is a graduate of the Women's Medical College of Philadelphia. She was a resident in the Lying-in Charity Hospital of Philadelphia and also in the maternity department of the Presbyterian Hospital of the same city. For 16 years she was a member of the teaching staff of the maternity department of the Women's Medical College, during the later years of her work there, being professor of clinical obstetrics.

Eastern Medical Society.—The following officers were chosen, to serve for the next year, at the annual election: President, Abraham Strachstein, M. D.; First Vice-President, Samuel J. Druskin, M. D.; Second Vice-President, Joseph Van Den Berg, M. D.; Recording Secretary, Joseph Girdansky, M. D.; Corresponding Secretary, Harry Cohen, M. D.; Treasurer, Benjamin Jablons, M. D.; Trustee, A. M. Hilkowich, M. D.; Chairman of Committee on Ethics, A. Hymanson, M. D.; Chairman of Committee on Legislation and Public Health, Z. Sharfin, M. D.; Chairman of Committee on Admission, Charles N. Gelber, M. D.; Chairman of Committee on Medical Economics, Harry Finkelstein, M. D.; Chairman of Committee on New Members, I. S. Tunick, M. D.

Death Rates for 1922.—The Department of Commerce announces that compilations made by the Bureau of the Census show a mortality rate for the registration area of 11.8 in 1922 against 11.6 in 1921 per 100,000 population. Six states—Michigan, Mississippi, Ohio, Pennsylvania, Virginia, Wisconsin—show lower mortality rates for 1922 than for 1921. The lowest 1922 state rate (8.1) is that of Idaho and the highest (14.7) that of Maine and Vermont. The lowest rate for cities which at the last census had populations of 100,000 or more was that of Akron (7.5); the highest (17.8) that of Memphis. Crude rates by no means tell the whole story regarding the healthfulness of different localities. Occupations, race stock, the sex and age distribution of the population, and the relative number of deaths of non-residents must be determined before one city or state can be considered more healthful than another. For example, death rates adjusted for the age and sex composition of the populations in different states, show what the death rate would be if all states had the same proportion of males and females, and the same proportion of the total population in each age group. Thus adjusted the 1922 rates are lowest (9.1) for Nebraska and highest (13.5) for Colorado; while for cities the lowest adjusted rate (9.2) is for Akron; the highest (19.3) for Memphis.

AMERICAN MEDICINE

JANUARY, 1923

LEADING ARTICLES

The Symptomatic Treatment of Tuberculosis.—By Edward O. Otis, M. D., F. A. C. P., Boston, Mass.
Weight Reduction. Further Consideration of Its Effect on High Blood-Pressure.—By Robert H. Rose, M. D., New York City.
A Voyage to Southern Lands.—By E. S. Goodhue, M. D., Pukoo-Molokai, Hawaii.

Medical Practice in India.—By Harriet Finch Randall.

Thyro-Glossal Cyst—Case Report.—By Charles N. Gelber, M. D., New York City.

Whither Are We Drifting as a Profession? Some Facts Worthy of Our Consideration.—By B. C. Keister, A. M., M. D., Americus, Ga.

The Appetite in Exophthalmic Goiter.—By Israel Bram, M. D., Philadelphia, Pa.

The Importance of Reflex Disorders Caused by Rectal Diseases.—By Bruce H. Beeler, M. D., Evansville, Ind.

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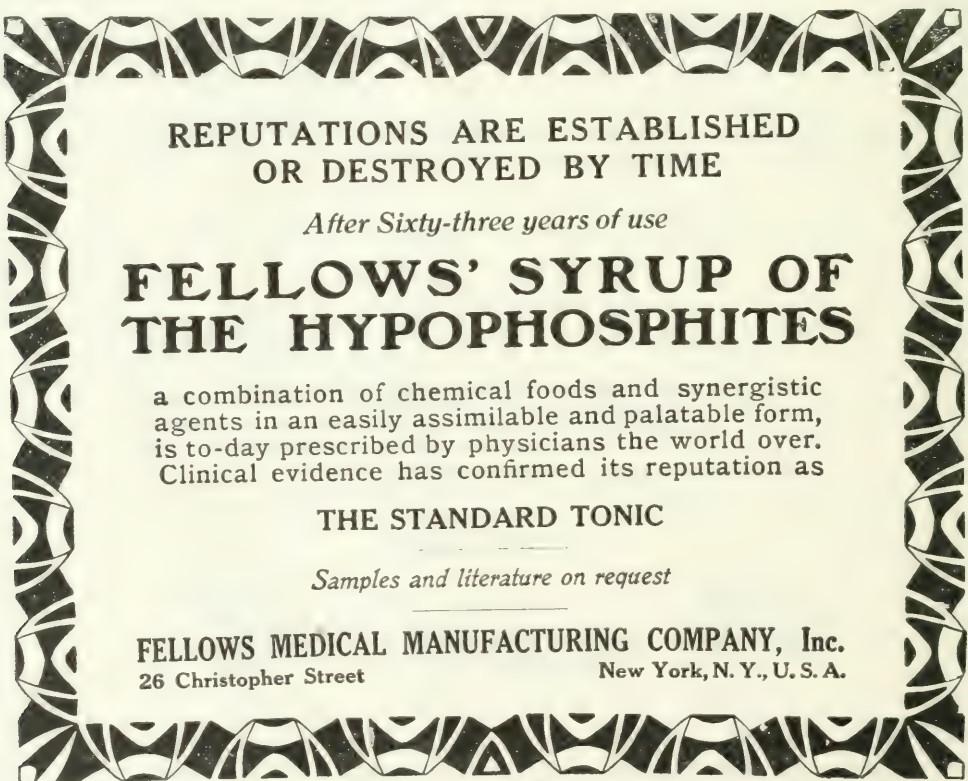
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NECESSARY IN DIVERTICULITIS

A specialist of international reputation, after defining Diverticulitis as the formation of small pouches along the walls of the colon due to prolonged constipated conditions, points out that these pouches, becoming filled with fecal matter, quickly cause inflammation which leads to ulcers of the bowel, abscesses or adhesions—even the growth of tumor masses and obstructions. A very serious condition, which, he says, is to be remedied only by careful non-constipating diet and the administration of liquid petrolatum.

NUJOL is the ideal liquid petrolatum for the correction of intestinal disorders. Its purity, quality, and general suitability to conditions of intestinal stasis is attested by leaders in the medical profession.

In determining a viscosity best adapted to general requirements, the makers of Nujol tried consis-

tencies ranging from a water-like fluid to a jelly. The viscosity of Nujol was fixed upon after exhaustive clinical test and research and is in accord with the highest medical opinion.

Sample and authoritative literature dealing with the general and special uses of Nujol will be sent gratis. See coupon below.

Nujol

REG. U.S. PAT. OFF.

A Lubricant; not a Laxative



Normal Colon



*Multiple Diverticula
of the Colon*

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- "A Surgical Assistant"
- "In Women and Children"
- Also Sample

Name.....

Address.....

MEDICAL PROGRESS.

Unique Among Antiseptic Solutions.

We are apt to look somewhat askance at any man who claims to be a "Jack-of-all-trades." There are physicians who are unfavorably impressed by any therapeutic product which is claimed to act efficiently in a number of different conditions. In many cases such an attitude is not to be wondered at. In the case of Alkalol, however, it is easy to understand how and why its use is adapted to a relatively large number of diseased conditions. It is enough to say that Alkalol is practically and peculiarly adapted for the relief and removal of irritation of the skin and of the various mucous membranes. Yet, to consider it only in this general way often impels the busy medical man, or even the specialist, to overlook some one of the conditions in which Alkalol should be employed. The structure of the mucous membrane is practically the same wherever it occurs in the body and the physiologic rules which govern the secretion of its gland cells and of the morbid processes which take place in it as a result of irritation or inflammation are practically the same. An inflamed conjunctiva, for example, differs very little from an inflamed nasal mucous membrane. The same is true of the nose and of the throat or of the urethra or the vagina. The natural result of mucous membrane irritation or inflammation is, first, congestion, followed by usually hyposecretion, which yields, if the irritation is continued, to hypersecretion, which, in turn, brings about both glandular and tissue atonicity.

Most solutions employed upon mucous membranes are apt to increase secretions and thus aid in bringing about lost tone. The great natural law has been laid down that the best of all antiseptic solutions for use on mucous membranes is their own normal secretion. It is a question of proper alkalinity, of correct salinity and of proper tonicity, the latter meaning, as a matter of fact, hypotonicity. The overworked cells must be supplied with certain physiologic salts. The vascular imbalance must be overcome, the tone of the tissues maintained, besides which, a soothing and healing action is most desirable. Alkalol meets all of these conditions and, therefore, comes the nearest to exerting the effect of the normal secretion itself. Alkalol, therefore, is unique among so-called antiseptic solutions. To realize this fact and to demonstrate it beyond question or doubt requires only a clinical test of the preparation. Alkalol has been so tested by thousands of physicians who, as a result, are constant users of Alkalol.

The physician who has not yet satisfied himself as to its practical efficiency can do so without cost and with a minimum of trouble by writing for sample and literature to the Alkalol Company, Taunton, Mass.

A Marked Price Reduction of Salvarsan, Neo-Salvarsan and Silver-Salvarsan.

The H. A. Metz Laboratories, manufacturers of "The Salvarsans," have announced a marked reduction in the prices of the various sizes of Salvarsan, Neo-Salvarsan and Silver-Salvarsan. These prices range from 60 per cent. per ampule for Salvarsan 0.1 gram, Neo-Salvarsan 0.15 gram, and Silver-Salvarsan 0.05 gram to \$1.00 per ampule for Salvarsan 0.6 gram, Neo-Salvarsan 0.9 gram, and Silver-Salvarsan 0.3 gram.

Colonel Metz has been able to make this reduction thru increased facilities for manufacturing, together with other lowered manufacturing costs, and he has determined to give the benefit of these advantages to the medical profession. This reduction will be particularly welcome to hospitals and other charitable organizations where large quantities of the arsenicals are used.

By manufacturing superbatches of the Salvarsans, the physician is able to obtain a sufficient amount of each control to carry on the treatment of the individual patient with one control.

The Salvarsans can be obtained thru any reliable dealer.

Further information and literature on technic, etc., is obtainable thru the H. A. Metz Laboratories, Inc., 122 Hudson St., New York.

A Complete Milk Food.

Nestlé's Milk Food is dried milk plus cereals, malt and sugar. It is a complete food, presenting in digestible form, everything that the infant needs to assure normal growth.

When breast feeding is impossible, many physicians have found Nestlé's Milk Food a reliable substitute in infant feeding. Complimentary packages will be sent to our readers. Address: Nestlé's Food Company, Nestlé Building, New York.

A Valuable Antiseptic.

Chlorazene is gradually taking the place of phenol, bichloride and other antiseptics used since the tallow candle days. Those doctors who are not now using this newer chlorine-carrying antiseptic are usually such as have never heard of it or given thought to its advantages. For certainly nobody, knowing the facts, would continue to employ the older antiseptic from preference. The facts can be summed up in a sentence, which is this: Chlorazene combines the utmost efficiency (against infecting organisms) with the greatest degree of safety (to the person using it). It may be entrusted to patients. It is safe to have about the house. And yet, it is up to 50 times more powerful than phenol, depending on the infecting organism against which it is used. The Abbott Laboratories, Chicago, supply handy tablets for making solutions. A sample tube may be had by writing the firm.

A valuable food in restoring health

WHEN wheat and malted barley are processed in making the ready-to-eat cereal, Grape-Nuts, the blended flours are subjected to slow baking for over twenty hours.

This process accomplishes important stages in the digestion of the grain starches, and dextrin and maltose result.

Dextrin and maltose, as is well known, form the basis of the most successful baby foods, and are well received by many people whose weakened digestive organs do not tolerate unchanged starches.

The crisp, golden-brown granules of Grape-Nuts invite thorough mastication, are condensed in content, and are very appetizing. Included with the iron, phosphorus and vitamin of the natural grain (the latter being demonstrated through exhaustive and authoritative laboratory tests in feeding) is bran from the whole wheat to help bowel activity.

Analysis shows that Grape-Nuts with cream or good milk is a complete food.

Physicians, familiar with the prejudice of patients against prescribed diet, probably will find no such difficulty when Grape-Nuts are suggested. This appetizing cereal is a regular food in so many homes, and is so widely appreciated for its flavor and nourishing goodness that it finds ready welcome.

Samples of Grape-Nuts, with full information, for personal or clinical trial will be sent to any physician who will write for them.

"There's a Reason" for



Grape-Nuts

Postum Cereal Co., Inc., Battle Creek, Mich.

Dielectric Treatment of Local Inflammations.

It has been asserted that physicians as a class might be referred to as disciples of doubt when confronted with the claims made for any therapeutic agent that is, in any way, novel or different in its action or effect. Rightly enough, the doctor must be conservative. The danger is that at times his conservatism leans too far backward and thus causes him to lose sight of some therapeutic agent which is really worthy of investigation. Dionol is such a product. Dionol is drugless and, for that reason, some physicians are inclined to question the possibility of its being of value in the treatment of local inflammation. This is unfortunate when it is borne in mind that local inflammation plays an important rôle in the production or maintenance of a vast number of pathologic conditions. The very nature of local inflammation precludes, naturally, the hope of being able to effect it to any considerable degree by the use of drugs, except in a very indirect and inefficient manner. On the other hand, altho the fact is to be regretted, few physicians have kept in touch with the vast amount of research that has been made to determine the actual causes and character of local inflammation. British authorities after extensive laboratory investigation have established certain facts bearing upon the connection between electrical disturbances in the body and the phenomena of local inflammation. They have gone farther than this and suggested the

use of certain remedial agents which they refer to as "dielectrics." It is its dielectric action that makes Dionol efficient, remarkably so, in any instance. The most important question, after all, is, "Does Dionol act? Does it overcome or relieve local inflammation or the suffering caused by it?" That the answer must be in the affirmative can be easily established by a clinical test. To try Dionol is to be convinced. To test Dionol clinically is to become a user of Dionol. The physician who is disposed to be fair-minded and who regards it as obligatory to inform himself as to any way or means by which he can benefit his patients should investigate Dionol. It is perfectly practical to make a clinical test, because cases in which Dionol acts efficiently constantly occur in the practice of every physician. A request addressed to The Dionol Company, Detroit, Mich., for literature, case reports, etc., regarding Dionol will receive prompt attention.

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"I have been using Sanmetto for a number of years in most all diseases of the genito-urinary tract from the meatus to the pelvis of the kidney and have found that invariably these are greatly improved by its use. I regard it as one of our best remedies." *From an unsolicited letter received by the Od Chemical Co., New York City.*

DURING CONVALESCENCE from **GRIPPE and PNEUMONIA**

when the appetite is subnormal, and the patient cannot eat the common foods,

YEAST VITAMINE-HARRIS

stimulates a natural, physiological hunger and shortens the convalescent period.

In such cases, the results are truly remarkable.

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Tuckahoe, New York

The Prompt Control of Nose and Throat Infections

is a question, ***first***, of destroying the attacking germs at the earliest possible moment after their presence is detected, and, ***second***, of accomplishing this result without at the same time so injuring the tissues attacked, and robbing them of their natural resistance that their condition will become a standing invitation to re-infection.

Too many of the bactericidal agents available today, in achieving the first result, invariably produce the other.

This is not the case, however, with

Dioxogen

H₂O₂ 12v

Directions

As soon as possible after the first sign of a cold or sore throat, the nose and throat should be sprayed or swabbed thoroughly with cotton pledges saturated with Dioxogen, diluted one part to three of warm water, especial care being used to reach the naso-pharyngeal mucous membrane as completely as possible.

If the condition indicates a severe infection, spraying or swabbing should be done by the medical attendant twice a day.

In addition to this, the patient should spray the nose and throat every hour or two with Dioxogen in a strength of two to four-teaspoonfuls to a half glass of warm normal salt solution. Frequently it is of benefit to insert once in each nostril a small tampon wet with Dioxogen, one part to ten of warm normal salt solution, the patient to retain these for an hour or two after the first treatment by the physician.

and any physician can easily demonstrate to his entire satisfaction, that this non-toxic and non-irritating germicide, if used before systemic invasion occurs, will not only control and overcome even the most severe and virulent infection in the nose and throat with gratifying promptness, but without the slightest injury or harm to the mucous membrane, however inflamed and sensitive it may be.

In fact, since its action is due entirely to its power to deliver an exceptionally large amount of pure oxygen—Nature's most potent germ destroyer—directly to the area of infection, Dioxogen is able to do all that the most powerful germicide can, and at the same time substantially aid in the restoration of the infected and injured tissues to a healthy and normally resistive condition.

The directions herewith are those routinely employed by a New York physician who has found that when Dioxogen is used within the first twenty-four hours, he is able to arrest the great majority of nose and throat infections and assure his patients complete and gratifying relief.

THE OAKLAND CHEMICAL CO.
59 Fourth Ave., New York City

For the Well-Being of Your Patients.

The idea back of the Sunsweet Prunes advertising is to *preach the gospel of health*—exactly what physicians are doing. So it seems that we have a community of interest—The California Prune and Apricot Growers Association and the medical profession.

There are well substantiated reasons why prunes should be a part of the everyday diet of your patients: they are rich in natural fruit sugars, they contain salts and organic acids that improve the quality of the blood and react favorably on the secretions; and they provide a natural corrective—a laxative from nature's own pharmacy. The value of Sunsweet Prunes in your patient's diet is well and interestingly told in their literature which gives reasons. This together with their new recipe packet will be sent to you gladly. Address: California Prune and Apricot Growers Association, 1249 Market Street, San Jose, Calif.

A Superior Neo.

Announcement is made by The Dermatological Research Laboratories that due to systematic research efforts, confirmed by thorough clinical work, there is now being produced in its Philadelphia plant Neoarsphenamine of

such low toxicity and high therapeutic effect as to mark a distinct advance in the treatment of the luetic with the D. R. L. product.

A recent revision of their important leaflet on "The Treatment of Syphilis" will be sent to physicians on request. Address: The Dermatological Research Laboratories, 1722-24 Lombard St., Philadelphia, or The Abbott Laboratories, 4739 Ravenswood Ave., Chicago.

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Since many mothers refuse absolutely to nurse their babies for which one excuse or another is given, there is more work for the doctor to do. For him, from the pecuniary standpoint, this ill wind that brings trouble to many a household is most beneficent. From the professional angle, however, his task is far from easy and perhaps he often wished himself relieved of it. A good substitute for mother's milk is not so readily concocted; formula after formula has failed, the infant persistently losing weight and frequently succumbing to intestinal disease.

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Urethritis—Cystitis—Prostatitis

*by reason of the soothing and correcting influence
it exerts throughout the urinary tract.*

**OF DISTINCTIVE VALUE
IN ACUTE URINARY INFECTIONS**

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MILES AHEAD of the OLD WAY

In the treatment of
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(Unguentum Eucalypti Compositum)

This mildly antiseptic ointment is thrown high against the turbinates by means of its applicator, where it melts at the temperature of the body, completely covering the outer walls of the nasal passages, reaching the post nasal cavity and the throat. Also combined with Boric Acid, Camphor, Ichthyol and Zinc Stearate, respectively. Sample on request.

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New York City



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INTRAVENOUS THERAPEUTICS,

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to you at once*

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Manufacturing Chemists

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Pioneers in Intravenous Therapy

The Old and the New.

The disturbances of the iodides are too well known to require comment, but custom and habit sometimes lead one to stick to the old when we *know* the new to be better. The old conception that an alkaline salt is necessary to convey iodine, in even a limited amount to the system has, as a result of latter day research, been proved erroneous. It is true that twenty years ago it was the best method we know, but times have changed and thousands of physicians today have proved to their entire satisfaction that the potency of iodine is increased many fold by administering it in a free state.

Thus the dosage of iodine can be safely increased and continued over long periods, if necessary, with results that could never be obtained from the old methods.

Service of the most definite character is attainable by administering Burnham's Soluble Iodine in adequate dosage. The advantages of this well-known product have been demonstrated beyond question for many years.

A Method for Preventing the Absorption of Intestinal Toxins.

"Keep the colon toxins from being absorbed by the body," is the urgent appeal of the modern authority. This is almost tantamount to saying: "Keep the mucous membrane of the

colon intact," for it is thru abrasions in this membrane, hindering the outflow of mucus into the colon, that the absorption of toxins from the fecal matter takes place.

To overcome such a condition, Nujol is freely used by the profession. It retards the absorption of poisons by preventing their contact with the living tissues. It also exerts a lubricating power, softening the stools to permit easy and frequent evacuation. In addition to this, an important function of Nujol is the absorption of toxins, retaining them in the fecal mass until expelled.

Nujol is readily accepted by the most "finicky" patient, because it is absolutely tasteless, odorless and of a crystal clearness.

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In those cases where the diet is restricted, and daily existence seems to the patient just one negation after another, you will find Instant Postum a source of much comfort and satisfaction. The rich, full-bodied flavor of Postum carries the comfort of a hot drink, much resembling coffee in taste, but with no ill effects. There is no caffeine or other harmful ingredient.

Samples of Instant Postum for individual and clinical examination will be sent to our readers. Address: The Postum Cereal Company, Inc., Battle Creek, Mich.

THE IDEAL

NERVE-TISSUE RECONSTRUCTIVE

ESKAY'S NEURO PHOSPHATES

SEND FOR
A PHYSICIAN'S SAMPLE

SMITH, KLINE & FRENCH CO.

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Pluriglandular Therapy in DIABETES MELLITUS

FOR SOME YEARS we have been developing an effective polycrine formula for increasing glycolysis and sugar tolerance in pancreatic diabetes.

After much clinical and laboratory testing we now offer to the medical profession

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(Harrower)

An endocrine combination embodying—

- (1) A specially prepared extract of **islets of Langerhans** (pancreas tail), rich in its incretory glycolytic product;
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- (3) A small dose of desiccated calves **tonsil**.

PAN-SECRETIN CO. (Harrower) is clinically useful in many cases of diabetes mellitus, favoring the reduction of the glycosuria, increasing the dietetic latitude and modifying the deranged endocrine balance.

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ORGANTHERAPY**
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Morphine and other drug addiction cases and alcoholism can be treated successfully by the Quayle method. It is safe and easy, the treatment being painless and supportive rather than depressant. No nervous period is experienced. Dr. Quayle also furnishes a Home Treatment for physicians to use in those cases where, for various reasons, the patient is unable to go to the Sanitarium.

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Every physician realizes the danger in our "too refined foods" of today—some of that roughness is a vital necessity. Kellogg's Bran, cooked and krumbled, supplies the deficiency. Unlike common bran, it has a most appealing nut-like flavor and can be eaten alone or with other foods by the most "fastidious" patient. Until you know Kellogg's krumbled bran, you do not know how easily this nature-food can be taken and how delicious it is. Bran is not a remedy, it forms no habit and should be a part of each day's diet.

Kellogg's Toasted Corn Flake Co., Battle Creek, Mich., the makers of this product, offer

a very easy way for you personally to know about and test out this natural method of relieving the ever-present evil of constipation. Just drop a card and they will send you a package of Kellogg's Bran without the slightest obligation on your part. Drop them a card today.

Milk Proteins.

Certain proteins, as those derived from milk, have been observed to cause leucocytosis and other changes in the blood when injected intramuscularly. The defensive forces of the body are stimulated thereby and with telling effect, it is said, against a number of circumscribed lesions. Dr. Edward Ahlsweide (*Arch. Syph. and Derm.*, May, 1922) names sycosis, some forms of eczema, furunculosis, buboes, erysipelas, arthritis, epididymitis among the lesions that can be successfully treated with milk protein injections. In Europe quite remarkable clinical success has been reported by Bruch, Muller, Forster and other physicians of note.

It is thought that they act by way of the myeloic (bone marrow) system.

Injections are best made into the buttocks, their frequency varying with the case. Lactigen is the preparation to use. Literature may be obtained by writing to The Abbott Laboratories, Chicago.

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Dr. Beverley Robinson has stated that we have no remedy equal to creosote in the treatment of tuberculosis.

It diminishes the cough in frequency and severity.

The breathing becomes deeper and more satisfactory.

Night sweats diminish and soon disappear.

Nutrition is aided and weight is increased.

A fair trial of Mistura Creosote Comp. (Killgore's) will convince you of its value.

Dose:—Teaspoonful in one-third of a glass of milk or water after meals.

Sample sent to Physicians on request.

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Manufacturing Chemist Estab. 1874

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O'Sullivan's HEELS

The resulting avoidance of shock and jars, prevents excessive fatigue and thus conserves the strength, vitality, as well as the mental and physical efficiency, of those who wear them.

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Pond's Extract of Witch Hazel is an example. A better preparation cannot be made. It is the one physicians should use when seeking the remedial effects of the well-known drug, hamamelis.

The Need for Rubber Heels.

Society in every age creates its own needs, in accordance with the changed conditions differentiating it from any previous age. There was a time, for example, when rubber heels were useless, uncalled for, serving no purpose. That was when men walked on the springy turf, trodding on the earth itself, with no sidewalk nor even floors intervening, before the advent of pavings. Today how different, especially in our cities! Today we walk from morn till night on hard, unyielding concrete; even the floors in our abodes are often of concrete, with only a thickness of carpet or linoleum between. The result is that the body is subjected to jarring with every step, as might reasonably be expected from the sharp, abrupt impact imposed

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The place of rubber heels is assured and of these O'Sullivan's are the best known and most generally worn. They are made of the best rubber, which accounts for their superior elasticity and wearing qualities.

A Concentrated Food.

To devise a diet is not so very difficult on paper. It is the practice that presents difficulties in many cases. Knowing the caloric value of different food items, their composition in terms of fat, carbohydrate, proteid, etc., and in a general way their degree of assimilability, one may write out, as he does a prescription, a list of things to eat for this patient or the other. Thruout it may conform to the advices of the text-books and the recommendations of the best writers on the subject. But when it comes to practice, the patient may revolt.

No food is acceptable to all patients alike, still when nourishment is needed in concentrated form, that will tax the digestive functions as little as possible. Bovinine should be thought of; a sample may be had from The Bovinine Company, 75 West Houston St., New York.

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An unusual cough preparation in composition as well as in action, and indicated in all coughs due to laryngeal or bronchial irritation.

An *Elixir White Pine Compound*, containing chosen therapeutic agents, and proven to be of exceptional value by 33 years of successful use by thousands of physicians.

Small doses, 10 to 20 minims, are so effective that it is inexpensive for your patients.

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FOUNDED 1828
THE WM S. MERRELL COMPANY
 CINCINNATI, U.S.A.

The Management of an Infant's Diet

*Mellin's Food contains 58.88 per cent of Maltose
Mellin's Food contains 20.69 per cent of Dextrins*
a proportion of

Maltose and Dextrins

best suited to the carbohydrate needs of the average baby.

Mellin's Food contains 10.35 per cent of Cereal Protein.

Mellin's Food contains 4.30 per cent of Salts which consist mainly of Potassium Salts, Phosphatic Salts, and a small amount of Iron.

These facts should be considered in selecting a modifier of milk for infant feeding and these facts point out some of the reasons for the success of Mellin's Food which probably is unparalleled in any decade since the beginning of the study of scientific infant feeding.

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Not to use

a product that is effective in many diseases, might be called unfair to the patient.

Not to know

of its curative value is equally indefensible in the light of over 20 years of thorough clinical research and highest professional approval.

Burnham's Soluble Iodine

does not irritate the stomach and kidneys, though given in large doses and over continuous periods. In auto-toxemia of whatever origin, and all septic processes its use means service of the most definite character.

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Readily Assimilable Phosphorus.

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It may especially be regarded as the necessary food for nerve cells and nerve centers. Any deficiency below normal requirements results in derangement of nervous function and some impediment of impulse transmission along

the highway connecting brain and muscle, brain and sense organs, etc.

Phosphorus in such cases may be supplied in ample amount and promptly by putting the patient on Eskay's Neuro-Phosphates, an excellent preparation, indeed, for regeneration of nerve tissue. Smith, Kline & French, 429 Arch St., Philadelphia, Pa., make it.

A Great Many People Need It.

Most physicians know that bran is effective in both mild and chronic cases of constipation. But in years past, it has not been easy to get a bran product which was pure, all bran, and good enough that the patient would readily take it.

If you have not tried Kellogg's Bran, which is cooked and crumbled, you do not know how good bran can be. It has a delicious nut-like flavor; you will find your patients will take it readily and be glad to know of a food which is at the same time delicious and a corrective.

An important fact about a pure all-bran product like Kellogg's Bran is the 8.41 per cent. mineral salts it contains—a vital element in the diet too often refined out of food by modern processes.

A full size package of Kellogg's Bran will be sent to our readers. Just send a card to the Kellogg Toasted Corn Flake Co., Battle Creek, Mich.

CHRONIC AFFECTIONS of the URINARY TRACT

Among the many remedies employed in chronic diseases of the genito-urinary organs, various silver preparations have long held a commanding position. In making a selection from these preparations, however, the practitioner is influenced, not only by the efficiency of its anti-bacterial activities, but equally by its freedom from irritation and other harmful effects. The quite remarkable association of these qualities in

COLLENE
(**Hydrosol Argentum Govett**)
.05%

Collene—a perfect silver colloid in permanent suspension—has proven itself of notable efficiency in the treatment of wounds and all acute and chronic infections of the mucous membrane throughout the body.

Non-toxic, non-caustic, and non-irritating to the most sensitive tissues. Does not stain nor discolor.

Send for booklet giving interesting clinical data and suggestions for treatment.

readily account for its widespread and continued use by medical men who have had an opportunity to give it a thorough and consistent trial in these ailments.

The results from its use are often exceptionally gratifying, and cases which have persistently resisted other methods of treatment, not infrequently show marked and substantial improvement within a few days. Discomfort and distress that have made the patient miserable soon disappear, and the urinary condition takes on an entirely new picture. Continued experience has conclusively indicated that Collene is able to render a special service in these chronic genito-urinary afflictions.

THOS. LEEMING & CO.

130 William Street Sole Distributors for
THE COLLENE LABORATORIES, Inc.
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COMBINES the delightful qualities of effervescence with the well-known digestive properties of Peptenzyme.

The powerful and effective action of Peptenzyme, supplemented with the tonic and refreshing effects of effervescence, thus insures both

PERMANENT BENEFIT AND PROMPT RELIEF in gastralgia, nervous and fermentative dyspepsia, flatulence, atonic indigestion, and to relieve the gaseous fermentation that usually causes so much discomfort in digestive disorders.

It is palatable to the nth degree and gives the physician a cooling and refreshing beverage, free from any hint of medicine, yet pregnant with therapeutic value.

Converts the Distresses of Indigestion into a Smile

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PEPTENZYME EFFERVESCENT GRANULES

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IODIDE OF POTASH

can be effectively and pleasantly pushed to the limit by using as a carrier

MALTZYME PLAIN

MALTZYME CO., Inc.
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TAUROCOL TABLETS (TOROCOL)

Torocol is a combination of bile salts, extract of cascara sagrada, phenolphthalein and aromatics.

TAUROCOL COMPOUND TABLETS

With Digestive Ferments and Nux Vomica.
Manufactured exclusively for physicians, prescriptions and dispensing. Complete formula, samples and literature on request.

THE PAUL PLESSNER COMPANY, DETROIT, MICH.

Prevention of Dropsy in Cardiac Cases.

Long before the stage of dropsy has been reached in a patient, the heart has needed support, and it is unfortunate that such support is sometimes withheld. Of course, it is seldom the fault of the physician. Many of these cases come to him late, and in that extremity where tapping must be done to afford immediate relief.

The slightest sign of circulatory stasis suggests to watchful professional eyes a failing cardiac musculature. In such a case it is vital to determine whether this is the condition really present or not. If it is, then a prescription is needed which will regulate the cardiac rhythm, strengthen the contractile or propulsive force of the organ, and so to avoid anything like such a collection of fluid as calls for tapping.

This can be done most effectively, it is said, with Anasarcin Tablets, in which several indicated remedies are judiciously combined.

For Undernourished Infants.

Virol has solved that ever-vexing question: what nourishment to give the delicate, undernourished infant—for many physicians. Virol is composed of Red Marrow, extracted from ox rib and calves' bones by C. P. of glycerine, refined marrow and beef fat, highly diastasic malt extract, eggs, lemon syrup and soluble phosphates.

In serious cases of acute infantile diarrhea the addition of Virol, under suitable conditions, enormously stimulates the phagocytic powers of the white blood cells. These sturdily attack the microbial invaders, and by diminishing the intestinal flora cut off the production of toxins at their source, with a consequent reduction of the catarrhal condition of the mucous membrane. As the glandular secretions become more normal they again exercise their inhibitory effects upon the flora, and digestion and assimilation are again established. Liberal samples of Virol and interesting literature will be mailed to physicians on request. Address: Geo. C. Cook & Co., Inc., 59 Bank St., New York.

Unusual Therapeutic Value.

It is the particular combination with zinc chloride that gives such therapeutic value to Lavoris. That is why many physicians have found it the mouth wash and antiseptic of choice and why they rely on its antiseptic and healing properties. That Lavoris is a product of merit and endorsed by discriminating physicians is evidenced by the success with which it has been used by the profession during fifteen years.

If you are not acquainted with Lavoris, a complimentary supply will be sent to our readers. Address: Lavoris Chemical Company, Minneapolis, Minn.

THE ORIGINAL AND MOST COMPLETE DIGESTANT For PROTEINS, CARBO-HYDRATES and FATS

ENZYDYN

An association
of high velocity reacting
Animal and Vegetable
Enzymes with Barley
Diastase.

Bottles of
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For
Gastro Intestinal Func-
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Indigestion, "Dyspepsia"
Flatulence, Colic, Nausea,
Vomiting, Mal-nutrition

PREPARED IN
THE LABORATORIES OF

THE HUDSON PHARMACAL CO.
UNION HILL, N. J.

SEND FOR
LITERATURE



DR. SENIOR: "Do not be in too big a hurry, Doctor, to reduce the temperature. Fever is not a disease you know—it is only a manifestation of disease—it is really an indicator."

DR. JUNIOR: "Why—I always thought it of first importance to reduce the temperature—and usually resorted to antipyretic drugs internally—Guaiacol externally—ice packs—in fact anything to bring down the temperature."

DR. SENIOR: "Such steps will reduce the temperature—but they have no salutary effect on the condition responsible for the elevated temperature. There is but one safe way—remove the cause. Would you smash the steam indicator to prevent the boiler from exploding? You would not—you would withdraw the fire which causes the steam. In using these so-called antipyretics you often disguise the condition—you smash the indicator—"

DR. JUNIOR: "And you don't recommend cold packs for this case?—"

DR. SENIOR: "Certainly not!—we will get at the temperature by using an agent that will favor the elimination of toxic substances and at the same time bleed the patient into his own capillaries, thereby relieving the heart. If you don't know the name of this 'sheet anchor' in pneumonia, the mainstay of thousands of physicians for thirty years, it is high time, my boy, that you did—ask the Antiphlogistine people to send you their, "Pneumonic Lung Booklet."

Dysmenorrhea.

Too often in the past recourse to opium or some of its derivatives has been considered the only means of promptly controlling dysmenorrhea. Recently recognition of the special value of Phenalgin as a rapid, safe and surprisingly effective pain-reliever in functional diseases of the female, has led countless physicians to employ this remedy in preference to the opiates. The benefits that accrue are at once apparent. Not only is pain controlled with equal despatch and completeness, but all dangers of a drug habit are avoided, the gastrointestinal secretions are not suppressed, constipation is not produced, and the remedy can be withdrawn without a single ill effect as soon as it has served its purpose.

As a consequence, Phenalgin has proved itself the ideal remedy for overcoming painful menstruation, and the results that can be obtained in functional menstrual disorders give it a place in gynecologic therapeutics that the conscientious physician will not fail to appreciate.

It's in the Product Itself.

Mellin's Food has always been a favorite with physicians in solving the infant feeding problem. Its success, which is constantly increasing, is based squarely on the fact that Mellin's Food contains 58.88 per cent. maltose and 20.69

per cent. of dextrins—a proportion of maltose and dextrins best suited to the carbohydrate needs of the average baby; that it contains 10.35 per cent. of cereal protein and 4.30 per cent. of salts, which consist mainly of potassium salts, phosphatic salts and a small amount of iron.

In other words, it is the merit of the product itself—and the resulting success physicians have had with it in feeding their small patients that has established Mellin's Food so firmly in the favor of the medical profession.

The Sluggish Liver.

The rôle of the liver in producing some of the most severe forms of autotoxemia is well known. The evils of circulatory stagnation and faulty intestinal or renal elimination oftentimes become serious in proportion to the degree of hepatic involvement. Too great attention, therefore, can never be paid to hepatic depletion in the presence of even the slightest obstruction or stasis. When the factors are functional and not organic in character, Sal Carabaña is an unexcelled means of accomplishing physiologic depletion and elimination. Its detergent effect on the intestines is promptly contributed to the liver, with a resultant decrease of hyperemia and a material increase in the secretions. The richness of Sal Carabaña in sodium sulphate gives it first place as a safe, reliable cholagogue cathartic.

Liquid Peptonoids with Creosote

acts promptly as an
Expectorant and Bronchial Sedative
in
Persistent, Hang-on
Winter and Automobile Coughs

It is Nutritive, Palatable and does not Disturb Digestion

Has merit as an Intestinal Anti-Sепtic

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THE AMERICAN PEOPLE

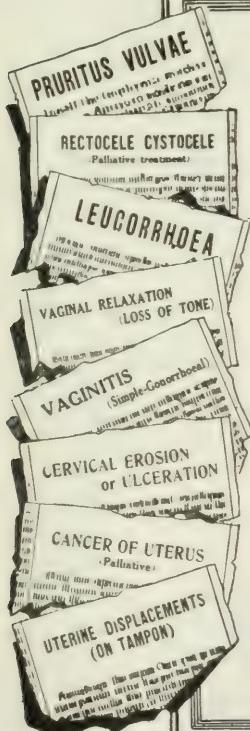
are often spoken of as a nation of dyspeptics, because of a rather general disregard of the principles of proper mastication.

DYSPEPSIA is often found the basis of many of the disorders physicians are called upon to treat. Experience has demonstrated that after advising patients regarding the chewing of food, the great necessity is to keep the gastrointestinal tract from becoming clogged and this can best be accomplished by the use of nature's aperient,

PLUTO WATER

Samples and literature to the medical profession on request

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"It's the little wheels of a wagon that go first." — JAPANESE PROVERB

AND it's his ability to relieve minor ailments that makes the physician's popularity.

MICAJAH'S MEDICATED WAFERS

are easy to use, prompt in action, prolonged in effect. They exert astringent, antiseptic, antiphlogistic, soothing and healing influence, thus contributing usefully to whatever other local treatment the doctor may employ in each individual case.

Literature, samples, sent to physicians only—on request.

MICAJAH & CO.
Warren Penna.



An Easily Assimilable Milk Powder.

There is in the minds of a majority of physicians a preference for, or it might be termed a prejudice in favor of milk as the best medium for the feeding of acutely ill, convalescent or invalid patients. The doctor has been taught, and rightly so, to regard milk as Nature's greatest natural food. He has been impressed, more or less, with the disadvantages of the raw material as it reaches his patients from the original source, but, in spite of this, the results obtained by using milk as a nutrient have been so satisfactory on the whole as to successfully resist all attempts (and they have been many) to disparage its use. It has come to be a question, therefore, not of whether or no to use milk for such purposes, but of the form of milk to be employed to obtain the most satisfactory results. The obvious solution of the problem was to get rid of the aqueous content of milk and to supply its solids in an easily digestible and promptly assimilable form. The answer to the problem can be found today in Dryco, which is a powdered milk produced by the rapid drying process. Dryco comes as a fine, white powder, easily and quickly soluble in hot water, very pleasant to the taste and very acceptable to the delicate stomach. The process of drying which requires practically only about two seconds, brings about a colloidal change in the casein which prevents, during the process of digestion, the formation of large, tough curds.

The milk fat is rendered easily digestible, approximating closely the digestibility of butterfat. Dryco has won a distinct success as a food for infants and this has to some extent diverted attention from its equally important value of feeding of acutely ill patients or in the nourishment of convalescents or invalids. It will well repay the physician who has not yet become acquainted with Dryco to do so. All that is necessary is to send a request for sample, literature, directions for preparing and using to The Dry Milk Company, 15 Park Row, New York, N. Y.

The Standard Mineralizing Tonic.

Fellows' Compound Syrup of the Hypophosphites combines the nutritive action of the chemical foods, calcium, sodium, potassium, iron, manganese and phosphorus with the dynamic properties of quinine and strychnine.

According to Prof. Albert Robin, of Paris: "In all infectious diseases, in all chronic anemic and asthenic conditions, the mineral content of the organism becomes impaired."

Many physicians have found Fellows' the standard mineralizing tonic, particularly effective in this important process of rebuilding the impaired mineral content of the organism.

Literature and samples will be sent gladly to our readers on request. Address: Fellows Medical Mfg. Co., Inc., 26 Christopher St., New York City.

FOLLOWING PAUL EHRLICH

THE supreme importance of the arsphenamines is in their trypanocidal power, which should not be lessened at the expense of the feature of technic. Lightning-like solubility of a drug solely affects the convenience of administration.

The combination of maximum trypanocidal value and of proper and complete solubility has been conserved in the production of

SALVARSAN (*Arsphenamine-Metz*) **NEOSALVARSAN** (*Neoarsphenamine-Metz*)
SILVER-SALVARSAN (*Silver-arsphenamine-Metz*)

in conformity with the theories, formulas and processes of the discoverer, Paul Ehrlich.

We will gladly send to any physician the report of the Medical Research Council of England (*The Lancet*, London, April, 1922) bearing this matter.



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A laxative "mixed"
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Out in California's sun-swept orchards Nature has set up a prescription case of its own—a pharmacy wherein is compounded a laxative known through the ages—prunes! Especially is this quality found in Sunsweet Prunes—the finest California produces.

Prune juice itself is an ideal laxative for babies and children, particularly in sensitive-stomached infants where other fruit juices are not tolerated. And, as a bowel-regulator for your adult patients—nothing better! For obstinate cases of constipation, the laxative value of prune juice may be strengthened in the process of cooking by senna leaves, tied in a small bag.

Our new recipe packet—"60 ways to shake hands with health every day"—shows many palate-pleasing ways to serve this natural body-regulator. It is yours for the asking—write today! California Prune and Apricot Growers Association, 149 Market St., San Jose, Cal.

SUNSWEET
CALIFORNIA'S NATURE-FLAVORED

Prunes



Inflammations of the Female Genitourinary Tract.

He is accounted a wise man who is willing to profit by experience. A very wise man, indeed, made the remark that "a stock of experience is worth more than all of the drugs that the doctor carries in his closet." It stands to reason that a drug, or a combination of drugs, which has stood the test of many years of time and trial should not be ignored by the busy physician who wants results.

Years ago an old-fashioned country doctor who had a large practice and, therefore, acquired a broad experience, evolved for his own use a combination of astringent, antiseptic, antiphlogistic, styptic, soothing and healing medicaments which he employed with very satisfactory results in the treatment of minor gynecologic ailments. In those days surgical treatment was, in many cases, out of the question. The average practical physician met with many conditions which he was forced to attempt to alleviate by the use of drugs. The combination in question proved so satisfactory that the doctor was led to speak of it to certain of his colleagues, who were prompt to profit by his experience and used the combination. As time went on, the experiment and its results, of this old-time doctor, were commercialized to the extent that the same combination that he used was placed at the disposal of the medical profession under the

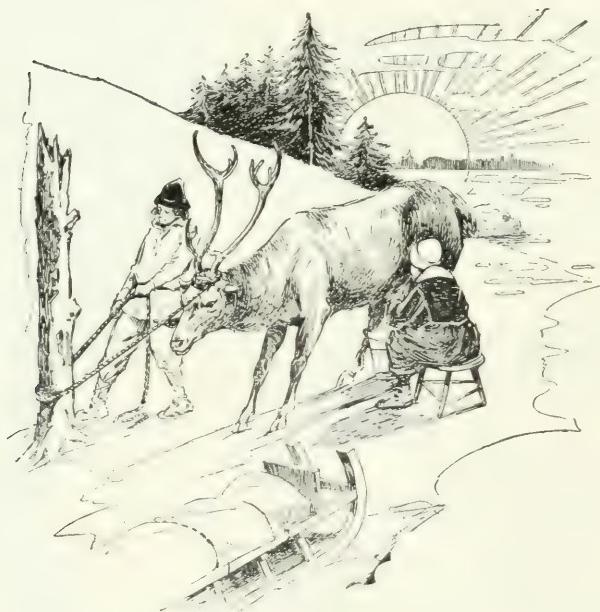
name of Micajah's Medicated Wafers. These were slowly introduced to the medical profession and the sale has steadily increased and is increasing at the present time. The claims made for Micajah's Medicated Wafers are not unreasonable. That such claims, based upon experience, are rational and reasonable can be proven easily enough by actual clinical test. The combination is an effective one to meet the conditions met with in many irritations and inflammations of the genitourinary tract in women. Hence, every physician should acquaint himself with the practical value of Micajah's Medicated Wafers, to which end samples and literature will be sent promptly on application to Micajah & Company, Warren, Pa.

In Senile Enuresis.

"I have been, for over ten years, prescribing Sanmetto alone and in combination with other drugs. I fully believe it comes up to all expectations and in its field I know of no other remedy I would prescribe with greater confidence. I believe the report of Dr. H. R. Weber covers its indications pretty well. I might add that combined with Belladonna and Fragrant Sumach it will be found very efficacious in enuresis of children and old people."

From an unsolicited letter received by the Od Chemical Co., New York City.

THE REINDEER DOES HER BIT



Different animals in different parts of the world supply Nature's greatest food--MILK.

But modern scientific methods have made it possible to supply *Dryco*, a sterile, stable, concentrated milk powder, easily prepared, promptly digested, perfectly assimilated, pleasant to the taste.

Dryco contains 32% Protein, 46% Lactose, 12% Fat.

Dryco is the ideal nutrient for
**SICK, CONVALESCENT
INVALID and
INFANT FEEDING**

*Send for sample, literature,
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"An International Institution for the Study and Production of Pure Milk Products."

PNEUMONIA AND INFLUENZA

ARE PREVALENT

AT THIS TIME OF THE YEAR

Both of these diseases are frequently fatal. Neither of them is difficult to diagnose, however, and therefore the crucial test in obtaining the best results is purely a matter of treatment.

The **Herradora Method** by intravenous medication is logical and therefore efficacious.

It is not a theory in the experimental stage but a **clinically established fact**. The results achieved are not those which can only be obtained under ideal hospital conditions. They are being obtained every day by physicians in their routine work.

Drop us a post card and we will mail you a monograph giving you full details. Do it today; it is well worth your while to know about the HERRADORA METHOD for PNEUMONIA and INFLUENZA. Results are in keeping with the Physician's prestige.

THE SCIENTIFIC CHEMICAL CO., Inc.

141 West 36th Street

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Experience the Best Teacher.

It is, unfortunately, fashionable in these days of so-called scientific medicine to question or even deny the practical therapeutic value of certain "old-fashioned" drugs. Expression is often given of the regret that the medical profession seems to be getting away more and more from that thoro knowledge of drug action which was possessed by the old-time doctor. The latter used a number of remedies, more or less empirically it may be, but of whose action and effect he was reasonably certain. Take Viburnum for example—there are those who, today, from a more or less theoretical standpoint, deny the actual efficiency of Viburnum. Yet, experience which is admitted to be the best teacher, has shown rather conclusively that in certain disorders or derangement of function in the female, the administration of Viburnum is followed by beneficial action and effect.

Physicians of past generations used Hayden's Viburnum Compound, used it carefully and intelligently and noted beneficial results therefrom. There was a time when the use of the knife for the relief of gynecologic ailments came to be regarded as having been abused, reaction followed and a large portion of the medical profession came to rely more upon drug action than upon surgical operation. There are, of course, many cases in which operative procedure is absolutely necessary. There are many other cases in which consid-

erable good may be accomplished by the administration of such agencies as "H.V.C." The practical physician cannot have too many strings to his therapeutic bow. If he has not become acquainted with H.V.C., he should certainly do so and a request addressed to the New York Pharmaceutical Company, Bedford Springs, Bedford, Mass., will bring sample and interesting literature regarding this old and time-proven product.

Prunes in the Dietary.

The general interest now evinced in the vitamines, as essential elements abounding in the natural foods for the maintenance of growth and well-being, prompts the thoughtful to consider the things that comprise their daily fare. Among others, the physician is being induced to pay more attention to dietetics, his concern extending very properly from his own immediate family to his patients as they come. He is not a mere prescriber or dispenser of drugs. There are other factors in life to reckon with. It interests him to know if the patient is eating correctly.

Prunes may often be made part of a well-balanced and nourishing meal. They are laxative, rich in iron, and contain a fair quantum of vitamine principles. The best come from California, we are told, under the brand-name "Sunsweet."



TO-DAY

Modern scientific research has provided the most efficient agent for the treatment of local inflammation

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applied locally over the affected area acts promptly with prolonged effect. Drugless. Non-irritant. Non-toxic. Indicated in

Mastitis
Burns
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To know ALKALOL is to rely upon ALKALOL.
Test ALKALOL in any of its indications,
CONJUNCTIVITIS, KERATITIS, IRITIS, HORDEOLUM,
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to increase the phagocytic capacity of the blood and thus add materially to the natural defensive forces of the tissues, secures for it a sure place in the therapy of such infections as typhoid fever, furunculosis, erysipelas, etc.

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Adrenalin.

When the pressor principle of the suprarenal gland was first isolated it was called Adrenalin by the manufacturers who introduced it to the medical profession. The derivation of the word is obvious—from the adrenal (or suprarenal) glands. And for several years after the product was made available commercially, it was reported upon in the medical press, both here and abroad, as Adrenalin.

In fact, the full momentum of clinical observation with reference to the various applications of the pressor or blood-pressure-raising principle of the suprarenal gland was provided by means of Adrenalin, the Parke, Davis & Co. product. This fact is of some significance, even now, for two reasons: First, Adrenalin has always been standardized, we understand, by the blood-pressure method; second, all products of this class are subject to molecular changes which have a bearing on their activity, and long experience in manufacture has doubtless revealed not only the danger but also how to avoid it.

Adrenalin blanches the inflamed conjunctiva when applied in a dilution of 1 to 10,000; the blood-pressure of anesthetized dogs is materially increased by the intravenous administration of less than one six-thousandth of a grain. This phenomenally powerful drug is applied topically in solution to mucous membrane in non-infective inflammations of all kinds, includ-

ing hay fever, administered subcutaneously in bronchial asthma, urticaria, serum anaphylaxis, and certain forms of hemorrhage, and given by vein in shock and collapse. The heart that has ceased beating has been known to respond to the direct application of Adrenalin.

Parke, Davis & Co. offer a booklet on Adrenalin to interested physicians.

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The value of heat for relieving pain and the advantages of sunlight in convalescence—both of which valuable agencies the physician well knows—can be obtained with ease and efficiency by the use of the Thermolite Light and Heat Applicator. This is a scientifically designed and well-made appliance that reflects a flood of penetrating light and heat in *parallel* rays—no focal spot to burn or blister.

The Thermolite Applicator is used in all government hospitals. Many progressive physicians are finding it valuable in the treatment of neuritis, rheumatism, lumbago, sprains, stiff neck, burns, ulcers, carbuncles and infected wounds. Ordinary hot appliances can give little of the value of radiant heat, as in sunlight and electric light—which penetrates deep into the tissues. For interesting and instructive literature, address H. G. McFaddin & Co., 35 Warren St., New York.

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The Bauer Chemical Company will be pleased to forward to any member of the Profession, free of any charge or obligation, a sufficient supply of Formamint Tablets to enable him to test thoroughly their usefulness in septic and inflammatory conditions of the mouth and throat, as well as their marked efficiency from the standpoint of prophylaxis. Formamint [simply dissolved in the mouth] has given such uniformly good results whenever it has been put to a clinical test, that we are anxious for every physician to become acquainted with these tablets, and to learn how delightfully different they are from the ordinary throat lozenge, both in point of palatability as well as bactericidal and therapeutic efficiency.

Address: BAUER CHEMICAL COMPANY
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GERM-KILLING THROAT TABLETS

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Anusol HEMORRHOIDAL Suppositories

Don't decide on operation in Hemorrhoid cases until Anusol Suppositories have had a conscientious trial.

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Is especially adaptable in Dermatological, Gynecological and Pediatric Practice

Its exceptional solvent properties make it an ideal cleanser.

Its mildly stimulating effect on the skin renders it of especial value in furfuraceous and scaly skin diseases.

Its emollient action makes it invaluable for cleansing inflamed surfaces —affording prompt relief from itching and burning, and promoting healing.

INGREDIENTS:

PINE TAR—Antiseptic, deodorant, healing antipruritic, tonic.
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SWEET VEGETABLE OILS—Emollient, healing.



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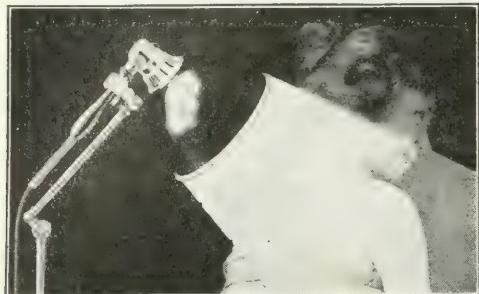
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NOTES BY THE WAY

Diagnosis and Treatment of Nocturnal and Diurnal Enuresis.—Francis B. Jacobs, in the *Penn. Med. Jour.* of September, 1922, reports results of 49 cases of enuresis treated by hypodermic injections of posterior lobe pituitary extract. The girls receive three doses and the boys five of 1 c. c. weekly. Of the 49 cases, 16 were cured, 17 greatly improved, and 16 remained unaffected. Therefore, 33 of 49 cases were cured or greatly improved by this method of treatment. Of course, such conditions as cystitis, vulvo-vaginitis, phosphaturia, and highly acid urines, also vesical calculi, undoubtedly cause enuresis and removal of cause will cure the enuresis.

Our Professional Brethren in Russia.—As our readers will recollect Dr. Nansen, the famous polar explorer, has given himself up to the humanitarian task of the relief of Russia during the last few years. We commend to general attention the following communication forwarded from Geneva, Switzerland, by the "Secretariat Du Docteur Nansen Pour Le Secours a la Russie," dated November, 1922, "Health Com-munique No. 1," which reads as follows:

"Dr. Haigh, a member of the Epidemics Commission of the League of Nations, who visited the provinces of Nikolaïff Kherson and Odessa in September, describes the serious situation of the medical and health institutions in a report addressed to Dr. Nansen.

"The hospitals lack everything for their good working. Drugs, linen, soap and disinfectants are all wanting; even clinical thermometers are very scarce.

"Dr. Haigh fears that the lack of preventive equipment will result in a grave extension of the epidemics of typhoid, typhus and relapsing fever during the coming winter.

"The medical staff, badly equipped, and even suffering from hunger, is making a desperate struggle with the situation."

These requests deserve a sympathetic hearing from a humanitarian as well as from our professional point of view.

NOTES BY THE WAY

Relations Between Chronic Suppuration, Nasal Sinusitis and Pulmonary Infections.—Sykes (*Texas State Jour. of Med.*, December) says that the great majority of chronic bronchitis and chronic bronchiectasis cases have a nasal pathology which has a definite bearing on the chronic infection of the lower respiratory tract.

Nasal pathology, especially obstructions to ventilation and drainage and suppurating sinuses, can have a decidedly bad influence on a case of pulmonary tuberculosis, by keeping up secondary infection and retarding, if not preventing, the final cure.

The Importance of Tetanus Prophylaxis.—In spite of the ease with which a temporary immunization against tetanus can be effected, fatal cases after insignificant accidents continue to be reported. One of the latest is that of a boy aged thirteen, who injured his hand with a toy pistol. At a clinic the hand was dressed and all appeared to be well until eleven days later, when the symptoms of tetanus made their appearance. Tho the boy was immediately hurried to hospital and a large dose of anti-tetanic serum was administered, he died the following morning.

This sad case, one of innumerable similar ones, carries a clear and unmistakable message, which should be heeded particularly by those physicians and surgeons who are not called upon frequently to take charge of accident cases. Obviously, we must never hesitate to inflict the slight possible discomfort which might result from the protein sensitivity of the patient, if by routine injections of the tetanus antitoxin we can safeguard life with a probability approaching certainty. It is worth remembering that the triumph of the prophylactic treatment of tetanus is one of the few medical successes proved by the war experience of all bellicose nations.

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GLEANINGS

Body Weight and Longevity.—The statistical investigations of insurance companies have proved a stimulus to medical progress in more than one instance. While the connection between weight or habitus and health and resistance has always been realized, we had to wait for the statistician to supply us with definite and irrefutable data. The problem is summed up in an interesting manner in a recent number of the *Statistical Bulletin* issued by the Metropolitan Life Insurance Company.

It is generally recognized that the weight of the human body in relation to its height plays a part in determining the health and longevity of the individual. It is only recently, however, that the long experience of the insurance companies has made possible the crystallization of this impression into a series of definite propositions. We know now, for example, that overweight is a serious impairment among insured lives, the gravity increasing with the excess in weight over the average for the height and age. But, even this statement has its exceptions because, at the younger ages, a limited amount of overweight is apparently an advantage. Such persons have uniformly a lower death rate from tuberculosis. It is after age 35 that overweight, even in relatively small amounts, begins to be dangerous. The seriousness increases with advancing age and with the amount of overweight.

Among short men, that is, those below five feet, seven inches in height, at the age period 40 to 44 years, an excess of 20 per cent. in weight involves an added mortality of 30 per cent. above the normal. A 40 per cent. increase in weight in such individuals involves an increased mortality of nearly 80 per cent. Among tall men, that is, those over five feet, ten inches in height, the adverse situation is even more marked. For, among them, at ages 40 to 44, a 20 per cent. excess in weight carries a 40 per cent. increase in mortality, and a 40 per cent. excess in weight doubles the mortality.

On the other hand, underweight, which

GLEANINGS

is common enough, presents a different picture. In general, underweight is an advantage, provided, of course, the proportion is not too great. It is a serious impairment in early adult life, especially among tall men. Those who are over five feet, ten inches, and who are 20 per cent. below the average weight for their height show an increased mortality of 30 per cent. Those having 30 per cent. underweight have a 50 per cent. excess mortality at these early ages. But, from age 40 onward, there are apparently no such penalties for underweight and this condition, in fact, becomes a distinct advantage; for these are the people who have the best mortality rates.

The important lesson taught by these propositions is that there is an optimum build with reference to mortality. The average build is not the best build. Those who weigh between 10 and 20 per cent. below the average show the optimum condition of longevity at the most of the ages after early adult life.

Treatment of Dehydration in Infants.

—The treatment advocated by Oscar M. Schloss in *Boston Medical and Surgical Journal* (September 21, 1922) for cases of severe dehydration is as follows: The patient is given a subcutaneous or intraperitoneal injection of Ringer's solution or saline and within an hour an intravenous injection of 10 per cent. glucose solution. The amount of isotonic saline, or Ringer's solution, varies with the size of the infant; the usual amounts by subcutaneous injection varying from 80 to 300 c. c. and by intraperitoneal injection, from 125 to 400 c. c. Twenty c. c. of a 10 per cent. glucose solution per kilo body weight is the rule, and it is important that it be given within a short time after the saline, and it should be absolutely clear, as even a small precipitate may produce serious reactions. The treatment outlined may be repeated in five or six hours if necessary.

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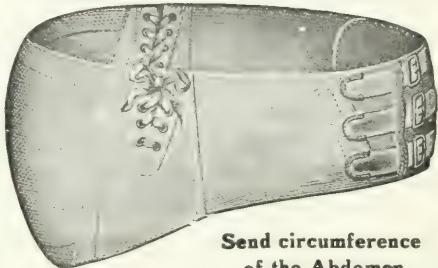
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Colds.—These are very common, and they are caused by viruses. They are usually accompanied by a runny nose, and a slight headache. They should be treated with a cold compress, and a warm bath. The best remedy is a gently rubbed cloth, three times in the twenty-four hours, with equal parts of soap and water. If there is a headache, it is best to give a small dose of aspirin. If the patient has signs of weakness, a homoeopathic cold remedy should be used. A simple syrup made of sugar and lemon juice should be given every two hours, or made into a weak tea, and taken every two hours during the night. If the weakness persists, a salve made of the best brandy, or whisky, should be given and repeated. In addition, combined with a brandy, ammonium, and laudanum, with a little sugar, should also be taken. I am also of the opinion that frequent use of oxygen is also desirable, and that it should be administered in such a way as to give the patient full benefit of it and its use. As far as an early stage of disease, a laxative pill or the following extract of cascara is essential to move the bowels, either in 24 or 48 hours.

Influenza.—This is a disease which comes on suddenly, and it is often very severe. It is caused by bacteria, and it is usually accompanied by a high fever. The patient should be given a good diet, and a large amount of water. If the temperature rises above 102° F., a physician should be consulted. The best remedy is a gently rubbed cloth, three times in the twenty-four hours, with equal parts of soap and water. If there is a headache, it is best to give a small dose of aspirin. If the patient has signs of weakness, a homoeopathic cold remedy should be used. A simple syrup made of sugar and lemon juice should be given every two hours, or made into a weak tea, and taken every two hours during the night. If the weakness persists, a salve made of the best brandy, or whisky, should be given and repeated. In addition, combined with a brandy, ammonium, and laudanum, with a little sugar, should also be taken. I am also of the opinion that frequent use of oxygen is also desirable, and that it should be administered in such a way as to give the patient full benefit of it and its use. As far as an early stage of disease, a laxative pill or the following extract of cascara is essential to move the bowels, either in 24 or 48 hours.

Diphtheria.—This is a disease which comes on suddenly, and it is often very severe. It is caused by bacteria, and it is usually accompanied by a high fever. The patient should be given a good diet, and a large amount of water. If the temperature rises above 102° F., a physician should be consulted.

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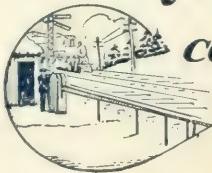
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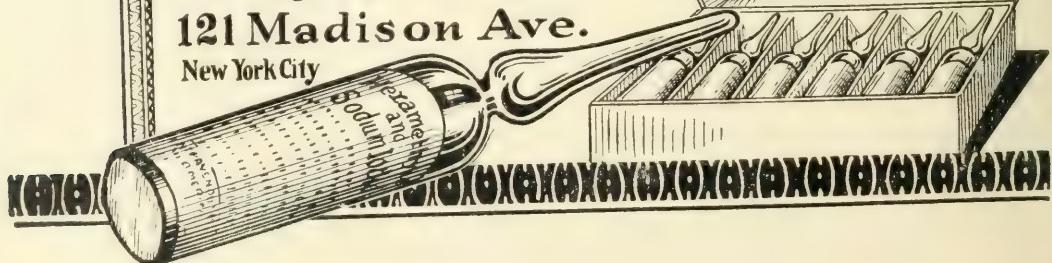
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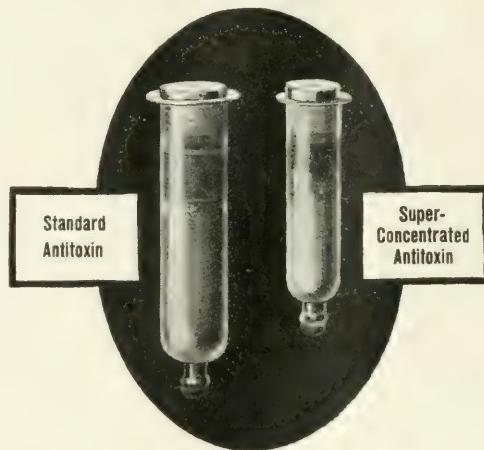
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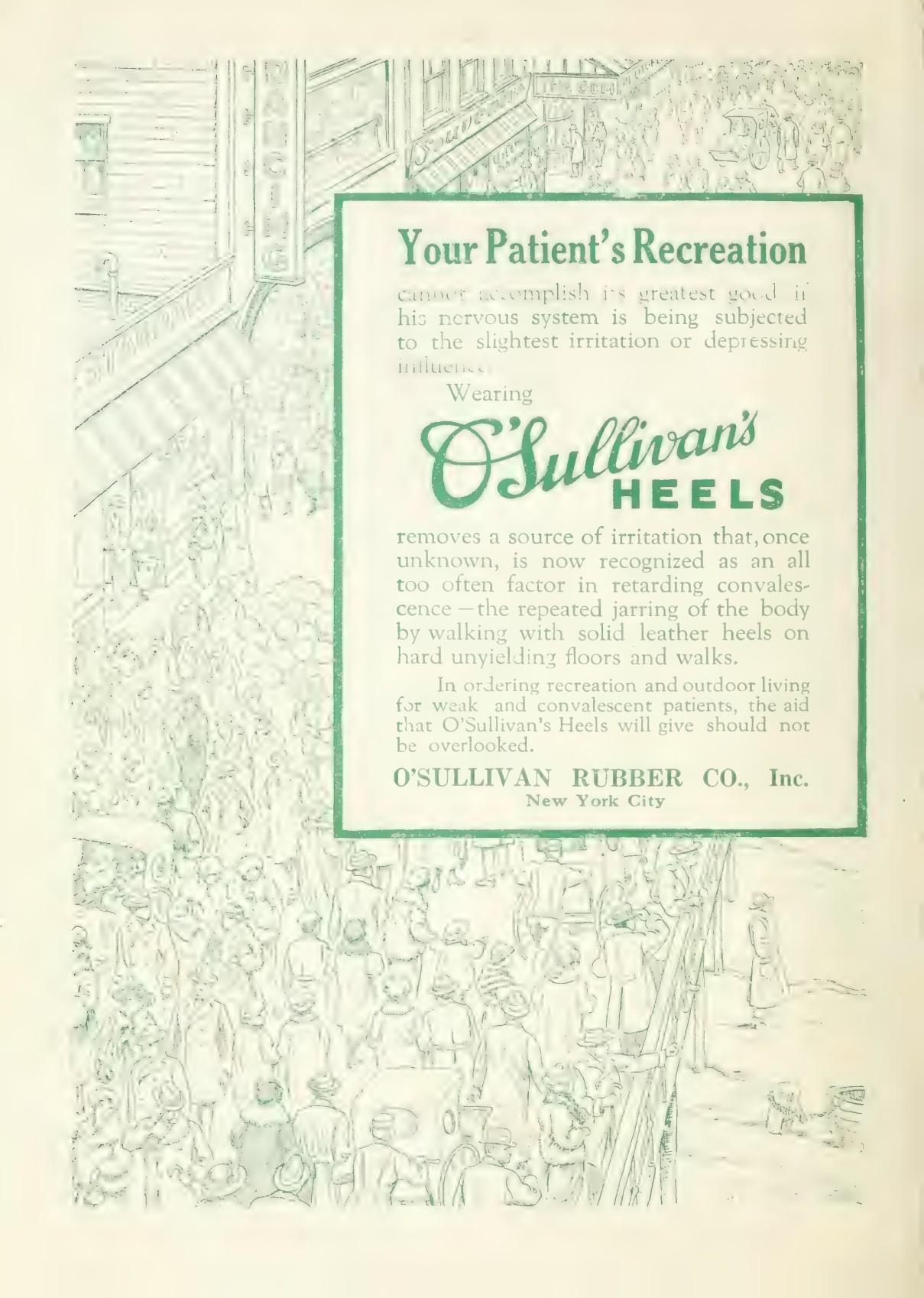
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